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## Original Articles

### THE CLINICAL HISTORY AND RECOGNITION OF TUBERCULOUS MENINGITIS.


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The symptomatology of tuberculous meningitis when well inaugurated is certainly characteristic and can offer very few difficulties to those who have followed any number of these cases through an illness. There has always been, however, a desire on the part of clinicians to recognize the disease in its incipient stage, or as the books call it, the first stage of the disease. So important a matter is this to the practitioner that the consultant is often confronted in his daily work with the important problem as to whether a certain symptom complex can definitely be said to be indicative of tuberculous meningitis. There was a discussion of this matter in a meeting of the Pediatric Society in 1890. At this time stress was laid on the fact that the early diagnosis of tuberculous meningitis was not only difficult, but in some cases well nigh impossible. Such symptoms as persistent vomiting, irregularity of pulse and of respiration and apathy certainly were indefinite guides to an early diagnosis. To-day, however, with our advanced clinical methods, we are able to approach a case with greater certainty than was possible in past years.

During the past six years I have been fortunate in having under direct observation no less than fifty-two cases of tuberculous meningitis in my hospital service. These cases were admitted at different periods of the disease, some coming to me on the second day of pronounced symptoms, others as late as the sixth week of the disease, the average duration of the disease before admission to my service being one week.

In all the cases which I will utilize for this paper the diagnosis was fixed clinically and confirmed either by postmortem examination, lumbar puncture or by animal experimentation. An opportunity is thus offered to consider an accurate symptomatology of cases which have been absolutely proved to be of a tuberculous nature. In all a tentative clinical diagnosis was at first made before the lumbar puncture was considered. In other words, no case was punctured unless there was a suspicion, at least, of meningitis, primarily that of the tuberculous variety.

#### AGE OF THE PATIENT.

The oldest case coming under our observation was ten years, the youngest six months. Eleven were under one year of age. Thirty-four per cent. (18 cases) were under two years of age, and thirty per cent, (16) were under four; thirty-four (18) were four years of age and over. The average of all the cases was four years and four months.

I have studied these cases first as regards the mode of onset; the condition of the nervous system, as evinced in rigidity of the neck, the Kernig symptom, the Babinski reflexes, general reflexes, the MacEwen sign, hyperesthesia, condition of the facial muscles and those of the eyes; the breathing, as to rhythm, whether regular or not; the condition of the fundus of the eye; that of the blood, whether a leucocytosis was present or not; and the results obtained by lumbar puncture. Incidentally, also, the course of the temperature, the complications and the presence of eruptions.

#### MODE OF ONSET.

The mode of onset in tuberculous meningitis has always been a matter for careful study and consideration, and there are cases recorded in the literature in which the mode of onset of tuberculous meningitis closely resembled that of cerebro-spinal meningitis of the epidemic type. Osler records a case in which the onset was sudden and in which the fatal issue occurred within six days.

In all my cases, old or young, I have never met an instance of such a rapid and lethal course of the disease. The nearest approach to such a rapid onset is the following:

*Patient.*—Male, aged 10½ years; family history negative.

*Past Illness.*—Measles, when 1 year old and diphtheria (?) at 4. Right arm fractured three years ago. No history of ear disease or glandular enlargement; no cough, night sweats nor hemoptysis; had been struck on the nose four weeks previously with a very hard snowball. Nose became very much swollen and red, and was apparently in normal condition again in about a week.

*Present Illness.*—This began one week before the child was seen with feeling of lassitude, loss of appetite and headache. On the night of onset of illness vomited once, projectile in character. Mother said there had been no fever and strabismus until past twenty-four hours. No chill or convulsions, but constant severe frontal headache without delirium. Pain in nape of neck since day previous, but mother did not notice rigidity. Photophobia had been marked since onset. Bowels had been markedly constipated all week, and there had been some abdominal pain. Urination was normal.

*Physical Examination.*—This was made on January 27. General condition good, well nourished, mental condition not apathetic; child answered questions intelligently. Marked hyperesthesia causing child to resist interference. The MacEwen sign was absent; delayed tâche cérébrales, erythematous flush over lower thorax, abdomen and thighs anteriorly. Larynx, thyroid and spine negative; finger tips showed slight cyanosis, no clubbing. Neck showed marked rigidity.

Eyes: Pupils equal, react to light and to accommodation. Marked internal strabismus of right eye; slight internal strabismus of the left; no petechiæ, but slight injection of conjunctivæ; no facial paralysis.

Ears and mastoids were negative.

Mouth: Tongue moist, heavily coated; teeth and gums in good condition; throat congested. No herpes, but a fissure at left oral angle.

Lymph nodes: Postcervical, axillary, inguinal and left epitrochlear nodes were palpable.

Lungs: Moderate infra- and supra-clavicular retraction—more marked on right side; expansile lower is good; anterior negative; posterior dulness at apex with a few sibilant râles; prolonged respiration.

Heart: Upper border at third rib; right border at r. b. of sternum; left border at nipple line; apex beat visible and palpable in fifth space, outside of the nipple line; no precordial bulging; action sligthly irregular; slight accentuation of first sound at apex; systolic murmur over both basic orifices; moderate accentuation of second pulmonic sound.

Pulses; Equal; slightly irregular, full, moderate force. No thickening or tension.

Liver: Fourth space, sixth space to one finger below free border, not palpable.

Abdomen: Distended, tympanitic, except in hypogastrium, where it was dull; no fluid wave; left kidney palpable, ascending colon too full for satisfactory palpation of right kidney. Spleen observed by tympany; not palpable.

Extremities: Patellar reflex present; Kernig present on both sides; no clonus; no Babinski; cremasteric reflexes on both sides and umbilical reflex present.

Genitals: Both testes descended; right inguinal being large; no impulse on coughing.

Rectum: Negative.

January 30: Patient was quite rational for past twenty-four hours; Kernig persisted in spite of fall of temperature. There was considerable rigidity of neck and strabismus was still present. He did not pass into the intervals of delirium which were previously present and took his nourishment well; hyperesthesia was marked; slept well.

February 1: From time of admission patient had a moderate continuous fever, with slight morning and evening variation. He was conscious, but lapsed frequently into mild delirium; did not complain of headache and did not vomit. The meningeal signs were practically unchanged; respirations were markedly irregular; the white blood cells, 15,800.

February 4: In the past few days condition had become poor; patient was more stuporous, but still conscious when spoken to; no longer complained of headache or pain. On February 3 temperature rose to 103.8; the fever generally had been high and continuous; internal strabismus was more marked and there was flattening of right side of face; the mouth was drawn to left side. There was marked rigidity, but no opisthotonus; Kernig sign was more marked on left side and there was no Babinski. Marked tâche cérébrale; very slight twitching of the arm.

February 5: Slight improvement in patient's mental condition; he answered when spoken to, but speech was very indistinct and low; right facial palsy persisted; respirations were audible and the tongue had a tendency to fall back; since the afternoon previous patient had difficulty in swallowing. Double optic neuritis was present and around the right disc were seen several hemorrhages.

February 6: Temperature, 99.4; Kernig sign present (10 a. m.). Lumbar puncture was performed and about 50 c.c. clear fluid were withdrawn.

*Pathologic Report.*—Cytology: Polynuclears, 10 per cent.; lymphocytes, 90 per cent. Spreads: Tubercle bacilli. Culture: Negative. Albumin: Increased. Sugar: Negative.

On admission this case impressed the writer as being one of cerebrospinal meningitis of the epidemic variety on account of the marked rigidity, hyperesthesia, the activity of the delirium, and the positiveness of the assertion of the parents of the sudden onset. When lumbar puncture was made the error was proved.

In all classes of society parents do not always observe accurately, and it is possible in all these cases in which the onset is said to be abrupt that there has been an indefinite period preceding the pronounced symptoms in which the patient did not feel entirely well. Children do not complain of mild symptoms as a rule. They are so anxious to be about and in the open that a slight headache and any indisposition, or a mild degree of fever, would scarcely be noticed. Hence I must regard all data as to sudden onset in the majority of cases of tuberculous meningitis as of doubtful nature.

Most mothers, it is true, are excellent clinical observers of their own children if they are allowed the time to observe. Among the poorer classes such time is not at their disposal, and the result is that the initial period of the disease is lost to observation. One mother may notice the insidious change in the conduct of her child, whereas another mother would scarcely have the time to see these changes, being too much occupied with her other duties to observe. It may be said here that in 86 per cent of the cases, that is in 42 cases, a positive history of insidious onset was given. The mother could tell us that the infant or child was not quite well, complained (if it was old enough) of slight headache and vomited from time to time. In those cases which came to us early, as in the second day of the disease, there was no history of vomiting. Generally there was a slight febrile movement, or the child was irritable, refused to nurse, or the mother simply noticed that the little one was not itself. It is only in those cases that came to us after the disease had lasted a week that there was a history of vomiting. In some of the cases among the older children there was complaint of pain and headache, in other cases there may have been a convulsion. As a rule, however, convulsions were not present until the disease had lasted fully twelve days or two weeks.

In the remaining cases (10) there was lacking a history of slow onset. One mother, bringing a child of six and a half years of age with a duration of illness of six weeks, thought that the disease began suddenly with fever, chill and headache. In our history there were two other cases of seven and eight years, respectively, in which the mother thought the disease began suddenly with vomiting and headache. Another case of two years, in which the mother asserted that vomiting and convulsions suddenly set in. In all these cases the house physician could not obtain a positive history of sudden onset, so that the child may have been ill for a week previous to the vomiting and convulsions, with slight malaise, and a busy mother, distracted by household cares, may not have noticed that the child was ailing. Therefore, confirming what is generally known of this disease, the onset in the majority of the cases that we could trace in the reliable histories was slow and insidious.

### NERVOUS SYSTEM.

The condition of the nervous system is of special interest in all these cases. Of greatest importance is the presence or absence of rigidity. There are some cases of tuberculous meningitis in which such rigidity is absent at all periods of the disease. Fourteen of our cases were of such a nature, in other words, 27 per cent. In some cases opisthotonos and rigidity, if present, as a rule were slightly marked, that is, the head was movable almost to a normal degree. Rigidity in all cases is tested simply as a child lies in bed; the head is raised, and if with the head the body is raised also, rigidity is considered to be present. In some cases a rigidity may only mean a stiffness of the neck; such a symptom will be easily recognized by any intelligent physician. In no case did rigidity appear before the first week, and in this respect tuberculous meningitis differs markedly from the meningitis of the acute cerebrospinal type, that is, especially of the epi-

demic form, in which rigidity is the rule and opisthotonos not infrequent.

Patients with tuberculous meningitis lie stupid, they do not notice what is going on and do not react to irritation as do cases of meningitis of the epidemic form. Hyperesthesia, either of the surface or the senses, as a rule, is absent or slightly marked. Such was the condition in 90 per cent. of my cases. In this respect tuberculous meningitis differs distinctly from that of the epidemic cerebrospinal form, in which hyperesthesia is the rule, not only from the onset but throughout the disease.

Much stress has been laid by various authors on the diagnostic value of the Kernig symptom in cases of meningitis, but it must be said that though we have found the Kernig symptom present in 22 of our 52 cases, it was absent in others, and does not aid the ultimate diagnosis of the disease. In fact, clinically, there are other symptoms which are more significant in the cases of tuberculous meningitis, which we have studied, than the Kernig symptom.

Strange to say, the Babinski reflex in children over two years of age is a much more valuable guide, clinically, as to the nature of the meningitis, if meningeal symptoms are present, than the Kernig phenomenon. In our 52 cases of tuberculous meningitis the Babinski reflex was present in 23 cases, and, if present, to my mind, it is presumptive evidence of the tuberculous nature of the disease, as compared to what is noted in the acute suppurative forms of meningitis. I have only found it present in exceptional cases of cerebrospinal meningitis of the epidemic type or of the suppurative form. The general reflexes were present in most of our cases of tuberculous meningitis, except in those where the patients came to us very late in the disease; in these they were abolished.

### SKIN ERUPTIONS.

The presence or absence of herpes or skin eruptions does not help us in the diagnosis of tuberculous meningitis, inasmuch as their absence is the rule and their presence is very inconstant. Certainly the presence of herpes and petechiæ are characteristic of cerebrospinal meningitis of the epidemic form, and at the outset of meningitis the presence of petechiæ speaks in favor of the epidemic form of the disease and will aid us in excluding the tuberculous forms. Herpes are seen in tuberculous meningitis, and if present are due possibly to a complicating neuritis or pneumonia.

Some of the minor points of diagnosis, such as the tâche cérébrale, which is present in most cases, not only of meningitis but in affections accompanied by cerebral symptoms, is of very little value and useless as an aid to diagnosis.

The pulse also as to its frequency and quality is of questionable value in the diagnosis of tuberculous meningitis. It is true in the acute suppurative forms of meningitis, especially cerebrospinal meningitis of the epidemic type, the pulse is quite rapid. But there are periods in this disease where the pulse may not only be slow but irregular, as in tuberculous meningitis, so that we can scarcely conclude from the frequency and quality of the pulse anything of diagnostic import.

The respirations in tuberculous meningitis are irregular in rhythm, sighing in character and in some cases take that form called Cheyne-Stokes. The same form of respiration is seen in meningitis of various types, so that we can scarcely consider the respiration, its character and frequency, as of any value in concluding as to the specific form of meningitis present.

Vomiting in tuberculous meningitis occurs at a time when the ventricles begin to be distended with fluid. It is rarely persistent. In a few cases of my series there was a history of unusual vomiting, but in no case could it be said that this vomiting formed a leading feature of the disease, nor did it attract attention to any extent, and its presence had to be ascertained by close questioning of the parents or friends of the patients. As a rule vomiting occurs once or twice in tuberculous meningitis. It is certainly not persistent. After the condition of hydrocephalus is well established vomiting may be repeated at frequent intervals.

### TEMPERATURE.

Of great utility is an exact observation of the course of the temperature at an early period of the disease. The absence of fever or a persistently low temperature with some of the cerebral symptoms detailed in this paper is very strong evidence of the presence of tuberculous meningitis. In those cases of tuberculous meningitis in which the temperature ranges as high as 104 and 105 we are either in the presence of a complication or in the period of the disease close to the exitus. As a rule, toward the exitus the temperature rises.

### PARESIS.

The presence or absence of localized paresis of the face or extremities is only useful as an aid to diagnosis toward the close of the disease. Being absent at an earlier period of the affection, it is of no value at this time and only becomes apparent when the accumulation of fluid in the ventricles and subarachnoid space is considerable. Pareses having once been established, their evanescent character is of great import. It is not infrequent to find that left facial paresis one day will give way to a paresis on the right side of the face the next. This is quite characteristic of tuberculous meningitis, and can only be explained by the fact that some of these pareses are caused by pressure on the nerves at the base of the brain and that this pressure is apt to change from time to time, varying with the amount of distension of the lateral ventricles by fluid.

### BLOOD.

The presence or the absence of a leucocytosis, or, we may say, the presence of a leucopenia, has long been considered as a very valuable adjunct to diagnosis in tuberculous meningitis, as in tuberculous processes elsewhere. In 35 cases of the series of 52 that we have studied the leucocyte count was lower than 20,000 to the c.mm. at certain periods of the disease. In the remaining cases the leucocyte count varied from 20,000 to 29,000 white blood cells to the c.mm. In no case did the leucocyte count exceed 29,000 to the c.mm. except in those cases in which a blood count was taken in the presence of impending death. In such cases the leucocyte count was found to be 32,000 to the c.mm. and in one case 39,000. It may be said, therefore, that leucopenia is presumptive evidence of a tuberculous process. We can not conclude positively in the absence of the opposite condition that no tuberculous process is present.

The lowest leucocyte count of any tuberculous case of the 52 utilized in this paper was 5,200. The condition of the blood, therefore, as far as the leucocyte count is concerned, does not reveal anything pathognomonic of the disease.

THE CONDITION OF THE EYES.

Of great interest in this form of meningitis, as compared to other types of the disease, is the condition of the fundus. The eyes of all our cases of meningitis were examined by Dr. Grüning or his assistants in the eye service of the hospital and he examined 46 of our cases of tuberculous meningitis. Of these cases the fundus was normal at the outset of 34 per cent. of the cases. In 66 per cent. of the cases there was some change in the disc, varying from optic neuritis to the presence of tubercle in the tissue of the choroid. In some cases the disc was simply swollen and indistinct in its margin, in other cases the veins were distended. The interesting fact is that choroid tubercle was present in 9 cases of the 46 examined as early as the second day of duration of the active symptoms of the disease, that is from the first to the sixth week of the disease. These tubercles in the choroid may be discovered at any period of the affection. I have seen them present in the fundus when the cerebral symptoms were insignificant.

As distinguished from this condition of the fundus in tuberculous meningitis, we may mention the fact that in meningitis of other types, especially in the cerebrospinal meningitis of the epidemic type, the fundus in the majority of the cases shows very little, if any, change throughout the disease. The presence of optic neuritis in cerebrospinal meningitis is exceptional! it certainly is not as frequent as in tuberculous meningitis.

PERCUSSION OF THE SKULL.

Of great value at the outset of tuberculous meningitis, where the symptoms are rather equivocal and while the child is still apparently conscious and plays during part of the day, is percussion of the skull. MacEwen was the first to apply this method of diagnosis, and his cases were mostly those of tumor or abscess at the base of the brain pressing on the veins in this locality and thus causing hydrocephalus. Although he investigated a large variety of cases in children and applied percussion of the skull to them in making a diagnosis of distension of the ventricles by fluid, he did not devote his attention to any one disease specially. In my studies of tuberculous meningitis and meningitis of the epidemic cerebrospinal type I have followed out percussion of the skull according to the method of MacEwen. This method I have described elsewhere, and I have applied it to healthy children in order to determine at what age this sign could be relied upon as an abnormal manifestation in children. That is, at what period of life the tympanitic note obtained by percussion over the lateral ventricles could aid us in a diagnosis of hydrocephalus. It may be said that beyond the age of two to two and one-half years, when the skull is completely ossified, this sign should not be present if there is a normal conformity of the head and if there has been no pre-existing hydrocephalus.

In 34 of the 52 cases which I have studied of tuberculous meningitis I have found that a percussion of the head at a very early period of the disease following MacEwen's method as to the position of the patient, which should be upright with the head slightly inclined to one side, the percussion being performed at the pterion, is a most valuable means of discovering the presence of hydrocephalus interna in tuberculous meningitis.

I recall the case of a girl of fourteen, who had been ill only one week, complained of headache, felt tired, with a tendency to be drowsy at times of the day, at others she was quite bright. The patient had absolutely no fever for eight days. When I saw the patient she was apparently asleep in bed; could be easily aroused, and when aroused recognized her physicians. There was very little rigidity of the neck, although Kernig's sign was present. Percussion of the skull cap in this case, according to the lines marked out by MacEwen, gave a tympanitic note over the pterion, and on this I unhesitatingly made a diagnosis of hydrocephalus, to the astonishment of the physician, who thought he had to deal with a case of hysteria, knowing, as I did, that hysteria could certainly not produce a percussion note of tympanitic character over the situation of the lateral ventricles of the brain.

This case was subsequently seen by other consultants, who were inclined at first to disagree with the diagnosis of tuberculous meningitis. A week subsequent to my examination the patient died with the classical symptoms of tuberculous meningitis, the other consultants agreeing in the diagnosis. Percussion of the skull at an early period of tuberculous meningitis is certainly one of the most valuable aids in diagnosis.

LUMBAR PUNCTURE.

The fluid obtained by lumbar puncture in cases of meningitis of the tuberculous and other varieties has been studied as to the pressure under which it is contained in the ventricles and in the subarachnoid space. (Quincke, Ricken, Falkenheim, Pfoundler.) As to its appearance, speaking now of tuberculous meningitis, (Lichtheim, Schiff, Brenner); as to its density (Achord and Loeper); its cryoscopy (Widal and Sicard); its chemical properties (Gautier, Achard); its toxicity (Widal, Sicard, Lensé), and its agglutinating properties in case of the tubercle bacillus (Hawthorn).

All above directions of study are of great value scientifically and have their important remote bearings. Clinically, the physician at the bedside is not equipped to carry out methods which will give him details as to the above, and we must seek practical results rather from an examination of the bacterial and cellular content of the fluid obtained by lumbar puncture. Inoculations in animals and cultures are also tedious, and though certain as far as animal experiment is concerned, 100 per cent. of the cases being positive (Widal and Le-Sourd), the physician seeking immediate results must resort to an examination of the centrifuged fluid by stain for the tubercle bacillus. Even here one would think that uniform results would be obtained. Marfan found bacilli only in exceptional cases; Heubner had similar results. Friedjung found them frequently; Kohts in 50 per cent. of the cases, Pfaundler in 70 per cent of the cases, Schlawyk and Manicatide in 16 of 19 cases. Lichtheim found the tubercle bacillus always present. Pfaundler found the bacilli more readily in the later periods of the disease (75 per cent.) than in the early stages (33 per cent.). Our own cases seem to show that though in the later stages of the disease the bacilli may be more abundant, their presence in the early stages can be verified by patient search of the fluid.

I have intimated in this paper that in 52 cases of tuberculous meningitis I have been able to make a diagnosis clinically in the majority of cases without the aid of what may be considered our most valuable, precise diagnostic method, that of lumbar puncture. In other words, lumbar puncture in the majority of my cases was performed after the diagnosis of tuberculous meningitis had been made as a possible condition. The

fluid withdrawn was then examined as to the presence or absence of tubercle bacilli.

I have left this procedure for more detailed consideration because I wish to show that it is possible with moderate certainty, to make a diagnosis of tuberculous meningitis early in the disease from a consideration of clinical methods which I am describing. No case of tuberculous meningitis should be positively considered as such until it had been studied for some length of time, a few days at least, because first appearances are always deceptive, and such a diagnosis once made is quite a serious blow to the friends of the patient. We should be exceedingly cautious, therefore, not to fix the diagnosis of tuberculous meningitis without the aid of an extended previous study of the case either through another physician or our own study at the bedside. Once having made a diagnosis of its possible presence, we may then proceed, and then only, to make a lumbar puncture in order to fix the diagnosis beyond equivocation.

I have never made a lumbar puncture in these cases without feeling that a meningitis of some kind was present. In other words, lumbar puncture should be resorted to only as a means of confirming or excluding the presence of a disease whose prognosis is hopeless. In this respect is it valuable to the friends of the patient? It is in tuberculous meningitis, especially, that much confusion has resulted on account of the various data given in different clinics as the result of the careful examination of the fluid obtained by puncture. Personally we consider that lumbar puncture is an absolutely certain means in a majority of cases of confirming the diagnosis of tuberculous meningitis, for we feel that in the majority of the cases tubercle bacilli can be found in the puncture fluid if care and diligence be exercised. The fluid, of course, must be drawn so as to be free of the mixture of blood, and a certain amount of experience is necessary to succeed in this respect. It must then be carefully centrifuged in order to examine the sediment. During the past five years we have examined 66 successive cases, of which two were doubtful, diagnosed clinically as tuberculous meningitis with a view of detecting tubercle bacillus in the puncture fluid. In 42 cases we have found the tubercle bacilli. I may say here that one man alone examined all fluids, and it is due to his patience that we have been able to prove that a diagnosis is possible in the majority of cases from the examination of the puncture fluid. Dr. Bernstein of the Mt. Sinai Hospital staff has devoted his time to this study, and a more detailed account of this work can be found in a monograph recently published by him.

In previous years we have not been successful in obtaining positive results in the examination of the puncture fluid, and we feel that this has been due to a faulty technic. In the years 1904 to 1906 29 cases diagnosed as tuberculous meningitis revealed tubercle bacilli in the fluid of puncture in 24. In two of these 29 cases a diagnosis was not fixed positively at the time of puncture. Thus in 24 of 27 cases punctured tubercle bacilli were found as confirming the clinical diagnosis. In those cases, it may be mentioned, incidentally, in which tubercle bacilli were not found in the puncture fluid, the laboratory was kind enough to inject this fluid into guinea-pigs, and in this way secured a positive result. This, however, was in an early period of our studies on the disease.

Thus it may be said that, given a case which clinically leads us to surmise the presence of tuberculous meningitis, a lumbar puncture is the most valuable aid we have to fix the diagnosis beyond a doubt, because in the majority of cases tubercle bacilli can, by patient search, be found in the fluids.

In some cases tubercle bacilli are not found during life in the puncture fluid, but are found in very large numbers in the fluid withdrawn from the subarachnoid space after death. This can be explained by the fact that during life there is a constant circulation wave present in the subarachnoid space, which keeps the tubercle bacilli in equal suspension, thus few tubercle bacilli will naturally escape discovery. After death this circulation wave ceases, a sedimentation of the bacilli takes place, especially in the bottom of the spinal canal, and are thus easily withdrawn in the puncture fluid.

We have studied also the cytology of the fluid obtained by lumbar puncture in tuberculous meningitis. This cytology we have tabulated in 18 cases as follows:

CYTOLOGY OF THE FLUID OBTAINED BY LUMBAR PUNCTURE; 19 CASES OF TUBERCULOUS MENINGITIS.

| Per cent. Polynuclear cells. | Per cent. Mononuclear cells. | Per cent. Polynuclear cells. | Per cent. Mononuclear cells. |
|---|---|---|---|
| 5 | 95 | 50 | 50 |
| .. | 100 | 5 | 95 |
| 20 | 80 | .. | 100 |
| 10 | 90 | 3 | 97 |
| 15 | 85 | .. | 100 |
| 10 | 90 | 3 | 97 |
| 30 | 70 | 30 | 70 |
| 10 | 90 | 15 | 85 |
| 8 | 92 | 35 | 65 |
| 8 | 92 | | |
| **Albumin.** | **Sugar.** | **Albumin.** | **Sugar.** |
| + | 0 | + | 0 |
| + | 0 | 4m. | 0 |
| + | 0 | + | 0 |
| ? | 0 | + | 0 |
| — | — | + ⅛ | 0 |
| + 3m. | 0 | + | 0 |
| 3m. | 0 | 5m. | 0 |

Fourteen cases examined for sugar 0, and albumin increased.

The cellular content of the fluid obtained by lumbar puncture in cases of tuberculous meningitis has been studied by Widal, Sicard and Ravant and shown to be not only of great interest, but also of diagnostic import. Their studies have been enlarged by Lenhartz, Pfaundler, Councilman, Wentworth and others. It may be stated that in the fluid obtained from cases of tuberculous meningitis there is a predominance of the lymphocytes in the greatest number of cases. The rôle played by the polynuclear leucocytes has been a matter of much discussion, and it has been shown that in rare cases the polynuclear leucocytes may predominate in the fluid obtained by the puncture. Bernheim, Moser and Marcon-Mutzner have published such cases. It may be said, however, that this polynuclear picture is not a primary one in tuberculous meningitis. It is found either in the latter stages of the disease, when there is a great invasion of the tubercle bacilli into the diseased area or in cases in which there is a mixed secondary infection. At all events polynucleosis coincides with an invasion of an increased number of tubercle bacilli or the breaking down of old caseous areas, and thus numbers of bacilli are set free into the cerebrospinal fluid so that an error which might be at first made by a misrepresentation of the predominance of polynuclear leucocytes is rectified by the easy discovery of tubercle bacilli in the puncture fluid. On the other hand, lymphocytosis of the puncture fluid has been seen, exceptionally in cases of meningism in typhoid fever, in the serous meningitis of bronchopneumonia, gastroenteritis, in the cerebral tumor, and in the adult in syphilitic meningitis (Widal). However these facts

may disappoint us as to the primary pathognomic significance of a lymphocytosis of the cephalorachidian fluid, we still can feel that in the presence of symptoms pointing clinically to a tuberculous meningitis a predominance of lymphocytes in the fluid obtained by lumbar puncture is of great value in coming to a definite conclusion as to the nature of the process in the meninges. It certainly rules out certain acute purulent forms of meningitis. Thus in our list of 19 cases 17 showed a predominance of lymphocytes to the extent of 70 per cent. or more. In this we must not forget that in the so-called forms of basic meningitis (cerebrospinal acute) we may in the chronic stages obtain a lymphocytosis. In such cases, however, the history will aid us in coming to a conclusion as to the significance of the lymphocytosis. Thus it may be said that a polynuclear leucocytic predominance is certainly indicative of the acute suppurative forms of meningitis, the presence of an excess of lymphocytes in the puncture fluid to the extent shown is strongly in favor of a tuberculous process.

Of interest chemically are the facts that normally the cerebrospinal fluid contains a substance which reduces Fehling's, but does not rotate polarized light; this is absent in cases of tuberculous meningitis. There is also in tuberculous cases an increased amount of albumin in the cerebrospinal fluid; Arthus finds almost always a substance called serine. We will not dilate on this aspect of the question of composition of the cerebrospinal fluid, as it seems to have as yet a limited practical clinical bearing. Of 14 cases examined for me all contained an increased amount of albumin and in none was glucose present.

### THE DIAGNOSIS.

It will be seen from what has been said that the diagnosis of tuberculous meningitis in the early stages of the disease is feasible to-day, whereas it was well nigh impossible formerly. The slow onset interrupted by periods of irritability, etc., the irregularity of the pulse and respiration, the low or normal temperature, the absence of hyperesthesia, the lack of appetite, the discovery of hydrocephalus by percussion of the skull as described, will all lead us to establish a meningitis of the tuberculous type. If after this we can obtain by lumbar puncture an examination of the subarachnoid fluid, in the majority of cases, we will fix the diagnosis beyond a doubt. The examination of the fundus of the eye for changes which accompany tuberculous meningitis in the initial stage, although successful in a certain proportion, as has been shown in this paper, leaves us without any positive data in the majority of cases.

If we compare what has been said with what is known of the onset of several forms of meningitis, especially those of the cerebrospinal meningococcic or pneumococcic type, we will see that there can be no question, certainly in the vast majority of cases, as to the possibility of making a diagnosis. Aside from the examination of the puncture fluid, the onset in the acute forms of meningitis of the epidemic type is always abrupt and unmistakably so. The high temperature also in the acute cases of the suppurative type, the rigidity, the constant presence of a Kernig, and the active hyperesthesia will complete the picture.

More difficult, it seems to me, will be the diagnosis as to the specific form of meningitis in children below two years of age who have been sick for some length of time. In these cases we know that the posterior basic forms of meningitis with their low or normal temperatures, the hydrocephalus, the low leucocyte count, the lack of hyperesthesia, the absence of anything even in the puncture fluid in some cases to aid us in a diagnosis, will make us fall back on the history of the case as to its acute onset before we can conclude whether we have a tuberculous process present or a chronic condition following an acute attack of cerebrospinal meningitis.

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## INTERMITTENT TICK FEVER.

### PRELIMINARY REPORT ON A NEW TYPE OF FEVER DUE TO TICK BITE (IXODIASIS).*

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FORT D. A. RUSSELL, WYO.

The older physicians in the Rocky Mountain regions have always insisted that there is a special type of fever indigenous to this section of the country. This fever or, as it appears to me, groups of fevers, has been given various names, but principally that of mountain fever. The group has simply been dismissed in recent years, although many good observers still hold that there is a type of fever which is neither malaria nor typhoid. It has been very generally held that exact laboratory methods would place these supposed specific fevers as aberrant types of one or the other of the two diseases.

A beginning has been made, however, in the description of the "Spotted Fever of the Rocky Mountains." This affection is now generally conceded a specific nature. So far as known it is very closely limited to narrow tracts of country and has a dreadful mortality rate. It has been assumed, although on insufficient evidence, that the disease is a form of ixodiasis. It also seems likely that here there may be a question of more than one disease, since very dissimilar cases without eruption have been assumed to be mild forms of the more severe disease.

Careful laboratory investigations with the fevers at this post gave most unsatisfactory results. Time and again marked remittent and intermittent fevers were encountered and the blood examinations remained negative. As a result a discouraging number of entries accumulated on the sick report with the diagnosis: "Fever; type undetermined." It was finally noticed that these fevers came in little groups. Then that the men affected had all recently returned from the vicinity of the maneuver reservation where they had gone either on fishing pass or on practice marches. Finally it was observed that all these men had been bitten by ticks and, indeed, a number of the men ascribed their fever to these tick bites. Working with these clues, much corroborative evidence was easily found. Then an opportunity arose to study six cases of fever arising in a party of eight men. These men had all been on pass in the mountains, and, of the eight, the six taken down with the fever had been bitten by ticks. Four of these six cases are here reported. Since that time the connection between the tick bites and the following fever has been frequently demonstrated. In July, 1906, there were under observation and study, in the post, three severe cases of tick fever developing in a party of five people who spent one night camping in the tick region. These cases are all identical with those to be described later.

* Special report to the Surgeon General U. S. Army; published by his authority.

I believe that the connection between the tick bite and the fever is indubitable.

The region in which the men from this post have become infected is that section embraced in the headwaters of the three small streams which go to make up Crow Creek. A large portion of this territory is in the maneuver reservation.

From observations made here it appears necessary to produce the infection, whatever it is, that the tick should fasten itself on the skin of the patient. In other words, that the rostrum of the insect should become imbedded. It also seems likely that the number of ticks biting the patient has some influence on the severity of the following attack, although on this point I am not entirely clear. Certain it is that in one of the sharpest cases (Case 5) observed here the patient had the largest number of imbedded ticks. Twelve in all had fastened themselves into this man's skin. In all the cases not only was there an undoubted history of tick bites, but there was distinct evidence of the bite at the place where the insect had been attached. In many of the cases small nodules had formed at the point of attachment of the insect. These nodules persisted for weeks. They were hard, pale and quite painless and varied in size from that of a pea to a small marble. In other cases the location of the bite was marked by a small red papule. From a number of these papules the rostrum of the insect was recovered. In these the rostrum had evidently been torn off and left behind in improper attempts at removing the ticks. Beyond the conditions here described there was no local reaction to the bite of the tick. Particularly were there none of the sharp local reactions that are sometimes described, amounting in some cases to cellulitis or abscess formation.[1]

A number of specimens of the tick were collected and sent to the office of the surgeon-general for identification on June 25, 1905. The ticks were referred to Dr. Charles Wardell Stiles of the Public Health and Marine-Hospital Service, who tentatively identified them as *Dermacentor andersoni*. This is the same tick which is supposed to be associated with spotted fever. Since that time I have had considerable correspondence with Dr. Stiles on the subject of the exact identification of this parasite with particular reference to its differentiation from *Dermacentor occidentalis* (Marx). He wrote me under date of March 5, 1906, that he has recently had an opportunity of examining all the original type specimens of *Dermacentor occidentalis* and finds that it is identical with *Dermacentor andersoni*. As the *Dermacentor occidentalis* has priority, the name Andersoni which he gave this special tick must be suppressed. The definite identification of the tick is, therefore, *Dermacentor occidentalis*.

### GENERAL DESCRIPTION OF THE DISEASE.

Generally the cases correspond to one type. After a short period of incubation, with brief and ill-defined prodromal symptoms, the attack is ushered in by a chill. Beginning slightly before the chill there is nausea or vomiting and intense pain in the muscles and joints, increasing with the appearance of the chill and becoming more severe with the rise of temperature. The chill lasts two or three hours, and with it a febrile movement begins, lasting, as a rule, forty-eight hours, although in exceptional instances it may only last twenty-four hours. Then a remission occurs and the temperature falls nearly or quite to the normal. The duration of the remission is about forty-eight hours, following which the same cycle is repeated.

As observed here, the disease consists of from three to seven such paroxysms, after which the patient, barring a pronounced anemia, is well. There is another type, but not so common as that just described, in which after the initial chill the temperature rises, ladder-like, for two or three days. These cases have more marked prodromes and more marked abdominal symptoms (abdominal tenderness and enlargement of the spleen) and present a clinical picture which is, at first, extremely suggestive of typhoid fever.

### PERIOD OF INCUBATION AND PRODROMAL STAGE.

The period of incubation varies between three and seven days. In the majority of cases the initial paroxysm developed four days after being bitten by the ticks. In one case only was the period reduced to three days, and in one no symptoms developed for seven days.

Nearly all the patients went through an ill-defined prodromal period marked by languor, malaise, fleeting pains in the muscles and joints, headache more or less severe, nausea and vomiting. Following these symptoms the attack itself begins with the chill.

### THE ATTACK.

*Initial Chill.*—The initial chill is present in all of the cases. It is severe and lasts from two to three hours. It is not an active chattering chill, like the cold stage of malarial ague, but is accompanied by much more discomfort and acute pain. Nausea and vomiting, even if not prominent during the prodromal period, now become marked. Following the chill there is a subjective sense of heat, although the actual rise of temperature begins with or shortly after the chill. After two or three hours there is a moderate sweating stage. With the beginning of the chill the headache and pains in the bones and joints become very severe. The patient is acutely miserable and suffers quite as much if not more than in the painful phases of dengue or epidemic influenza, certainly much more than in the ordinary benign malarial infections.

*The Paroxysm.*—The fever rapidly rises to 103 or 104 F., and remains high with narrow fluctuations for forty-eight hours in the ordinary type of paroxysm. In some few cases the febrile stage only lasts twenty-four hours. After this stage is passed an intermission or remission occurs, during which the temperature falls to or near the normal. In this stage, as a rule, the patient is quite comfortable. The severe headache and bone and joint pains disappear. Nothing remains but a feeling of exhaustion and weariness. This intermission lasts forty-eight hours, thus completing the cycle, when a second chill takes place and the second paroxysm begins and terminates as the first; a two-day fever and a two-day intermission. The succeeding paroxysms after the second are apt to be progressively milder. Very exceptionally this rule of periodicity is altered and there is a one-day fever, but always then with a three-day intermission; in the large majority of cases, however, the two-day fever and two-day intermission obtains.

*Abdomen.*—Generally there is pain and some degree of tenderness distributed over the entire abdomen, but nowhere very severe. In two cases there was a slight degree of meteorism, with gurgling in the right iliac fossa. The tenderness is, perhaps, a little bit more pronounced over the hepatic and splenic areas. No enlargement of the liver could be certainly demonstrated.

1. Vide Anderson's and Stiles' reports.

On the other hand, enlargement of the spleen with tenderness can be shown almost from the beginning, although moderate in extent. As has been already stated, a few cases presented rather more marked abdominal symptoms and, together with a creeping temperature, made at first a picture extremely suggestive of typhoid fever.

*Urine.*—Nothing unusual was found in the urine of any of the patients. Numerous examinations showed some high specific gravities and the usual conditions found in febrile urines.

*Blood.*—Particular attention was paid to the study of the blood and careful search was made for the so-called *Piroplasma hominis* (Wilson and Chowning, 1903) or some allied form. Some few objects were found resembling the published descriptions and drawings in Anderson's report.[2] A very careful study of these bodies leads me to the conclusion that they are either artefacts or, more likely, evidences of vacuolization of the erythrocyte with deposit of the staining materials in the margins of the vacuole. It seems to me that Craig's[3] criticism of *Piroplasma hominis* is probably entirely correct. It impresses me that the evidence

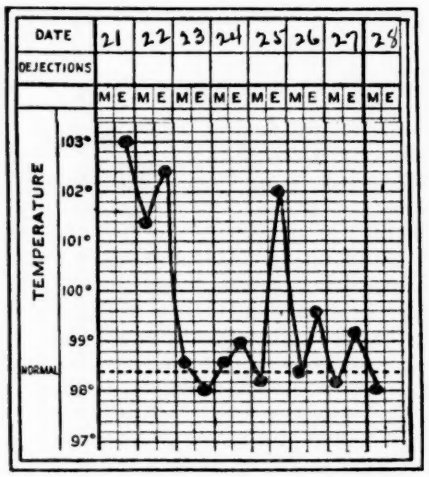


Chart 1.—Illustrating the temperature in Case 3.

on which the validity of *Piroplasma hominis* rests is very insecure, and for that reason very little importance was placed on similar appearances in the blood of these cases.

There is a constant and progressive fall in the number of red cells. This fall was constantly observed and, paroxysm for paroxysm, is certainly as marked as the red corpuscle loss following severe malarial seizures. In some of these cases a numerical loss of almost 20 per cent. followed one seizure. Particular attention is invited to the blood chart in Case 5, in which a daily complete blood study was made. In this case it will be observed that three two-day paroxysms resulted in a fall in the number of red cells from 5,800,000 (which is considered a fair normal in this altitude, 6,200 feet) to 2,600,000. The loss is apparent not only in the faces and mucous membranes of the patients, but also in the appearance of the blood drops taken for examination. The pallor and poverty of the blood is very apparent to the naked eye. The loss is replaced slowly and for two months in the patient whose chart is here shown there was well-marked anemia.

The hemoglobin loss follows the diminution of red cells very closely. Therefore, the color index is not much disturbed. In this chart the hemoglobin fell to 48 per cent. (estimation with Dare hemoglobinometer). The restitution of the hemoglobin to normal is somewhat slower than the restitution of the red cells. Consequently during convalescence the color index is slightly minus.

With regard to the leucocytes no decided finding was made other than an increase in one type of cell. It is evident that there is no marked leucocytosis, although nearly all the cases showed a slight increase in their numbers. Differential counts showed a constant moderate increase in the large mononuclear cells which in numbers amounted not only to a relative but also to an absolute increase in their numbers. Six differential counts in Case 5 resulted as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Polymorphonuclear..... | 76.6 | 77. | 72. | 71. | 73. | 72. |
| Large mononuclear .... | 12.4 | 13.6 | 15.6 | 16.5 | 15.6 | 16.6 |
| Lymphocytes ..... | 9.6 | 9. | 11. | 12. | 10. | 11. |
| Eosinophiles ..... | .8 | .4 | .9 | .6 | .8 | .4 |
| Mast cells ..... | .6 | .0 | .5 | .0 | .6 | .0 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

This leucocyte formula is suggestive, since considerable stress has been laid on the significance of a marked increase in the large mononuclear cells in malaria. In the so-called human piroplasmosis (spotted fever of the Rocky Mountains) Anderson gives the following formula averaged from two counts in a case observed by

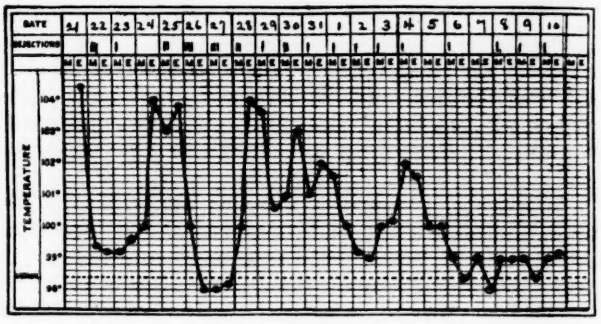


Chart 2.—Illustrating the temperature and remissions in Case 5.

him, and it will be seen that the leucocyte change in this, too, is similar.

| | |
|---|---|
| Polymorphonuclears ..... | 77.7 |
| Large mononuclears ..... | 11.4 |
| Small lymphocytes ..... | 10.0 |
| Eosinophiles ..... | .9 |
| | 100.0 |

The agglutination reaction with the bacillus of typhoid fever was carefully and repeatedly looked for in each case, and in all the examinations were negative. Search for malarial parasites was also made in all the cases and in none were any found.

## TREATMENT.

Quinin was administered in all the earlier cases without any apparent effect. I believe that it increases the subjective discomfort. It certainly has no beneficial effect either on the paroxysm directly or in the line of preventing its recurrence. I am quite convinced that arsenic has a controlling and curative effect on the disease, particularly when used subcutaneously or intravenously. The subcutaneous injections are, in my opinion, distinctly to be preferred to the intravenous, but are apt to be followed by annoying burning which lasts from fifteen to thirty minutes. The best formula is Kobner's, and if a little cocain be added to it the burning will be prevented, thus:

2. Bulletin 14, Hygienic Laboratory; Public Health and Marine-Hospital Service.
3. Amer. Med., Dec. 10, 1904.

℞. Sodii Arsenitis ..... 0.1
Cocain Hydrochlor..... 0.4
Aquæ .....10.0

This solution should be sterilized and is used in a dose of from 1 to 2 c.c. twice daily. After the acute phases the blood deterioration must be met by smaller doses of arsenic or by the administration of the ordinary iron preparations.

Brief case histories of the six patients on sick report and of one case occurring in the post this year are here appended.

CASE 1.—G. B., private Eighth Battery Field Artillery; born in Michigan, 1879; in the service 2 9/12 years. Family history negative.

*Previous Personal History.*—Diseases of childhood. Chancroids one year ago.

*Present Illness.*—He left post for the reservation on June 10, and returned on June 12. On the morning of June 12 he found five ticks attached. He had a severe chill on Friday, June 16, lasting about two hours, with severe headache and severe pain in all the bones and joints. He had fever all that day and the next, and then had two good days, during which he complained of feeling dragged out. He was admitted to sick report at the beginning of the second paroxysm, with a temperature of 102.3 F. Altogether he had six paroxysms of the two-day fever type with two-day intermissions. On the whole, this was a mild case.

CASE 2.—F. P. P., private Eighth Battery Field Artillery; born in Kentucky; aged 24; in the service 2 10/12 years. Family history negative.

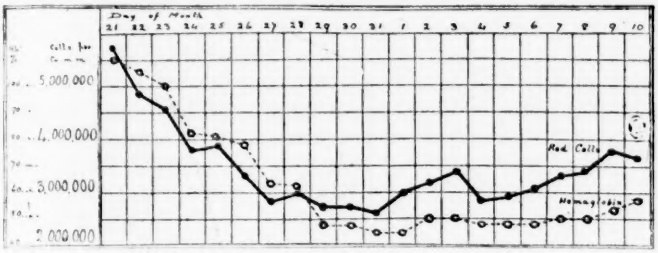


Chart 3.—Blood chart in Case 5. The solid line shows number of red cells; the broken line shows hemoglobin percentage.

*Previous Personal History.*—Operation for appendicitis three years ago; recovery complete.

*Present Illness.*—He went to the reservation on June 10 and returned on June 12. During his stay there and after his return to the post he found six ticks attached. He had a severe chill on June 16, with fever, headache, and sore joints. The next chill was on Monday, June 19. It lasted three hours, with the same symptoms as before, with the addition of vomiting. The patient was admitted to hospital during the fourth paroxysm. On admission the places where he had been bitten were marked by hard, pale nodules the size of a pea. Five such nodules were found and one papule from which the rostrum of a tick was extracted. There was a marked anemia. The red cells numbered 3,650,000; hemoglobin, 60 per cent. This attack was apparently cut short by arsenic.

CASE 3.—A. M. T., private Eighth Battery Field Artillery; born in Ohio; aged 25; in the service 7/12 years. Family and previous history negative.

*Present Illness.*—He went to the reservation on June 10, returning on June 12. On June 11, Sunday, several ticks fastened on him, just how many he does not know. He had a severe chill with nausea, fever, headache and pain in the bones on Thursday, June 15. The chill lasted four hours and the fever all through the next day he says. The next chill was on Monday, June 19. He was admitted to Lospital in his third paroxysm and had one more after entering, making four in all. On admission there were clear marks where four ticks had attached themselves to the skin. Chart 1 shows the last two attacks. The blood loss was moderate.

CASE 4.—J. S., private Eighth Battery Field Artillery; born in Ohio; aged 23; in the service 9/12 years. Family and previous history negative.

*Present Illness.*—He went to the reservation in company with the three other men on June 10, returning to the post on June 12. Some time on June 11 three ticks attached themselves to the skin. He had a chill with nausea and fever on June 14 and slight chilly sensations with fever on the fifteenth. The next two days he felt quite comfortable. Then he had another hard chill and thinks that the fever lasted three days with two days in between, when he felt tired out, but thinks he had no fever. On June 23 he had his third attack, for which he entered the hospital.

This was a mild case and complete recovery was fairly rapid. The blood loss was moderate.

CASE 5.—C. R., lance corporal, Hospital Corps, U. S. A. Family and previous history negative.

*Present Illness.*—He went to the timber reservation on fishing pass on July 14. On the 15th several ticks bit him and the next day several more, in all twelve. He had a very severe chill on July 20, with nausea and vomiting. After the chill he had a severe fever and pains in the head and all the joints. The chilly sensations continued all that day and the following morning. The afternoon of July 21 he was admitted to hospital with a temperature of 104.2 F. He had then an active delirium. The second paroxysm occurred on July 24 and a third on July 28. After this third paroxysm the temperature remained continuously above the normal for several days, and the usual remission did not occur until August 2. A mild attack was observed on August 4. Chart 2 shows the temperature changes in this case, and Chart 3 the blood changes. This man was acutely ill, and in about ten days had developed a profound anemia, which is shown in Chart 3. For two months following the attack he was weak and pale and the blood recovery was slow and tedious. During the second week of his illness his disease represented what I have described before as the "typhoid type" with considerable abdominal tenderness, enlarged spleen and continuous though irregular temperature.

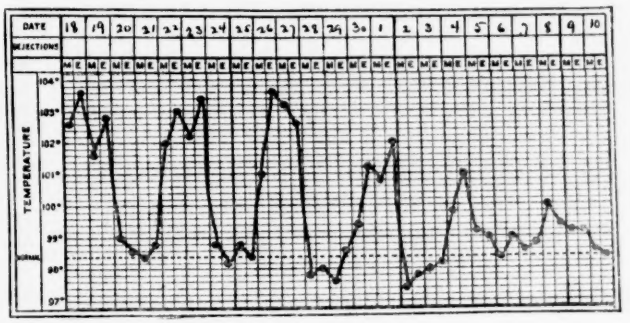


Chart 4.—Illustrating temperature and remissions in Case 7.

CASE 6.—S. E. B., trumpeter, Company B, Eleventh Infantry. Family and previous history negative.

*Present Illness.*—This man was in the party with the patient in Case 5. So far as he remembers, six ticks fastened on him, although on admission to hospital only three papules could be found and one hard little nodule to show where the insects had taken hold. The initial chill came four days after, but was not severe. Three days later he had a second chill and on July 24 a third chill. All these were accompanied by fever, headache and general aching and soreness. He was admitted to hospital in his third chill, and he had a fourth and fifth paroxysm. He was not clear in his own mind as to just how long the the first three attacks had lasted. The fourth and fifth attacks, however, were of the one-day fever period with three-day intermissions. This case was a mild one and is detailed principally on account of the variation in the periodicity of the attack. The length of time is the same from the beginning of one attack to the beginning of the next, only in this instance the attack lasts but one day, making the interval three days. This phenomenon is very likely due to an attenuated infection or to a decline in the virulency of the case as the end of the disease approaches.

CASE 7.—Miss S., aged 24, white, female, unmarried. Personal history negative; has never had malaria or any other fever.

*Present Illness.*—On June 14 she went with a fishing party to the dam in the reserve. On the 15th several ticks fastened on her. Three of these she pulled away forcibly and a fourth, she says, came off without any trouble. On the 18th she had a severe chill with nausea and vomiting. For several hours before the chill she had felt languid and had a slight nausea. She also had a slight headache. With the chill she had high fever and became delirious. The following day the fever had remitted about one degree (Chart 4) and the delirium had passed away, but she suffered very greatly from headache and pains all over her body. At this time two red papules were noticeable at a point near the right anterior superior spine of the ilium. From both of these the rostrums of the offending ticks were removed. There was another papule on the right chest and two between the shoulder blades. In one of these latter the rostrum of a tick was also imbedded. During the second day there was considerable tenderness over the entire abdomen, possibly a little more marked over the right iliac fossa, the liver and tne spleen. The liver was not enlarged. The spleen was moderately enlarged and rather tender on deep pressure. On the third and fourth days the fever became almost normal, and the patient said that she felt well, although greatly weakened. The second paroxysm began on the fifth day, and the subjective symptoms were, if anything, more severe than in the first attack. From tnat time the course of the disease, as may be seen from Chart 4, was typical; the two-day fever periods and two-day intermissions continuing through six cycles. In this case there was considerable loss of weight, as well as a very severe anemia. The blood conditions in this instance have not yet been fully worked out.

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## IS SCARLET FEVER A STREPTOCOCCUS DISEASE?

LUDVIG HEKTOEN, M.D.
CHICAGO.

Since the earliest application of microbiological methods to the study of scarlet fever the streptococcus has claimed the lion's share of attention. Its significance has grown as the observations have extended. At present the streptococcus is held by some to be the actual cause of the disease, while others, and I think the majority, look on it as essentially a secondary invader on which, however, depends to a large extent the fate of the patient.

For the purpose of discussing this question it is necessary first of all to consider the occurrence and the distribution of streptococci in scarlet fever. Numerous investigations[1] have indicated that streptococci occur on the tonsils of scarlet fever in far greater abundance than in health. In his study of the bacteria of the throat and skin in scarlet fever Weaver calls special attention to the enormous numbers of streptococci in the throat in this disease and to their gradual disappearance as convalescence progresses. For various reasons, but principally because of the lack of convenient means, most of the studies of tonsillar streptococci give few details in regard to the cultures obtained. On this account G. F. Ruediger[2] last year made a careful detailed study by means of the newer methods, of the streptococci and diplococci in the throat in scarlet fever, certain other diseases, and health. Ruediger made use of the blood-agar plate method of Schottmüller and Rosenow. On the blood-agar plate *Streptococcus pyogenes* produces small gray colonies, surrounded by a perfectly clear area of laking, while the colonies of certain other chain-forming cocci and of pneumococci are green. His results must be considered as striking because they show that *Streptococcus pyogenes* is constantly present in great abundance on the tonsils of patients with scarlet fever and with simple tonsillitis before the throat symptoms begin to subside. He found *Streptococcus pyogenes* in small numbers only in 59 per cent. of the 51 normal throats he examined, while pneumococci and the large groups of organisms (*Streptococcus viridans*) that lies between *Streptococcus pyogenes* and the pneumococcus were found in about equal numbers in the normal and the scarlatinal throats, thus showing that constant presence on the tonsils of *Streptococcus pyogenes* in large numbers is an outstanding feature of scarlet fever.

From the throat streptococci frequently pass to neighboring structures and give rise to more or less serious complications. They may also reach the circulating blood and cause streptococcemia as well as various internal and articular localizations.

In 100 unselected cases of scarlet fever in which I examined the blood systematically during life, streptococci developed in the cultures from cases, all of which recovered, although several were very ill.[3] In Jochmann's series of 161 cases streptococci were recovered in 25 patients, all of whom died.[4]

By way of explanation of this divergence I may point out that my cases occurred in a mild epidemic, were strictly unselected, most of the patients being over 10 years of age and many over 20, whereas Jochmann's cases occurred in a frightfully severe epidemic, the patients being children under 10 and probably not strictly unselected. All observers agree that in fatal scarlatina general streptococcus infection is demonstrable after death in the large majority of the cases. Baginsky and Sommerfield[5] report streptococci in the blood and the internal organs of every one of 82 patients, including several in whom death occurred early and in whom there were no gross lesions. In other series general streptococcus infection was presented in a smaller percentage of the cases (Wright, Pearce, Slawyk, Jochmann, etc.), and several instances of fatal fulminating scarlatina have been described in which there was no demonstrable evidence of serious streptococcus infection (Böhm, Jochmann). In general streptococcus infection *Streptococcus pyogenes* appears to be the predominating form; occasionally, however, we meet *Streptococcus viridans*.

Now, if streptococci play an essential and constant part in scarlet fever as, indeed, seems to be the case, then we would expect to find in the blood of the patients various specific antibodies of streptococci, more particularly agglutinins and opsonins. And in case the streptococci concerned in scarlet fever differ essentially from other streptococci we naturally would hope to find in these biologic reactions means of differentiating between them.

As a matter of fact, various observations have been made on the agglutination of streptococci by scarlatinal and other serums, but the results lack the desired uniformity. In an important article on the subject Weaver[6] has pointed out that this in part may be due to technical difficulties and in part because it has not been recognized adequately that variations in the composition

1. For references to the literature see Weaver, Trans. Chicago Path. Soc., 1903, v, 222, and Jour. Med. Research, 1903, ix, 246.
2. The Jour. A. M. A., 1906, xlvii, 1171; Jour. Infect. Dis., 1906, iii, 755.
3. THE JOURNAL A. M. A., 1903, xl, 685.
4. Ztsch. klin. Med., 1905, lvi, 316.
5. Arch. f. Kinderheilkunde, 1902, xxxiii, 1.
6. Jour. Infect. Dis., 1904, i, 91.

and reaction of the culture medium have a marked influence on the agglutinability of streptococci.

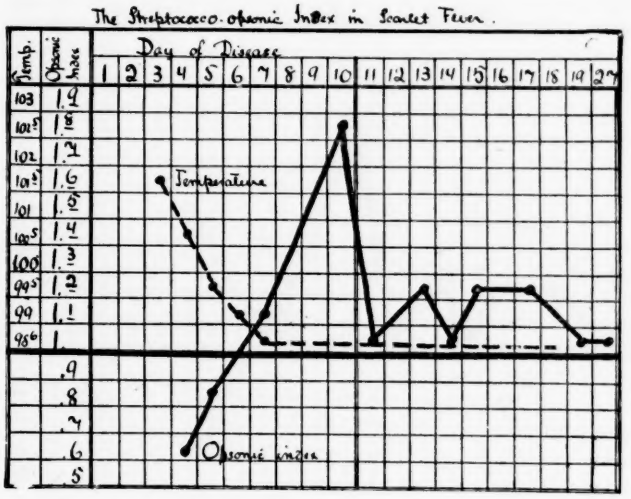
In general Weaver's results show that in scarlet fever agglutinins develop for streptococci, but that these agglutinins are not specific for streptococci obtained from cases of scarlet fever, and like agglutinins form to an equal degree in erysipelas and even in pneumonia and probably other infections not necessarily streptococcal. We see then that as the matter now stands no decisive conclusions are indicated by the agglutination of streptococci by scarlet fever serum as to their relation to scarlet fever. The scarlatinal streptococco-agglutinins should be studied still more closely in the hope of obtaining results of more positive significance. Thus, it is quite possible that fairly characteristic relations may be found to exist between the agglutinin curve and the course and character of the attack. Experiments with the serums of animals immunized with streptococci have given results that in some instances are rather suggestive of a degree of specificity on the part of scarlatinal streptococci. Ruediger found that most strains of *Streptococcus pyogenes* isolated from the throat in scarlet fever were clumped in fairly high dilutions of the serum of sheep immunized with an organism from the same source but not at all by the serum of sheep immunized with a streptococcus from phlegmon of the leg or with *Streptococcus viridans*. Here also further work is necessary.

As to the streptococco-opsonic index in scarlet fever I may say that a recent study in our laboratory by Miss Tunnicliff, the results of which are not yet published, indicate definitely that the index is below normal during the acute stages of the disease in the majority of cases; as the symptoms subside the index commonly rises above the normal to which the return may be more or less abrupt. During uncomplicated convalescence the index is normal or a little above. If complicating streptococcus localizations set in the index remains low until improvement begins. These variations in the streptococco-opsonic index appear to be specific because they are not associated with corresponding variations in the opsonic index for other bacteria such as the pneumococcus, the staphylococcus, and pseudodiphtheria bacilli.

From the facts presented in this condensed form we are justified in concluding: (1) That the predominant feature of the bacteriology of the throat in scarlet fever is the constant presence of large numbers of *Streptococcus pyogenes;* (2) that the overwhelming majority of the so-called complications and of the deaths in scarlet fever are due to invasion of the tissues and the blood by this microbe; and (3) that in scarlet fever, even when mild, the organism gives evidence of systemic reaction to streptococci by variations in the streptococco-opsonic index and probably also by the formation of streptococco-agglutinins. There is, therefore, no escape from the conclusion that *Streptococcus pyogenes* or some form thereof plays a most significant part in the scarlatinal process, but are we ready to take the final step and to conclude that scarlet fever is wholly a streptococcus disease, all the phenomena of which, including the acquired immunity, are satisfactorily explained by the distribution of the cocci in the tissues and by the intoxication with their products?

It is quite true that many of the essential phenomena of scarlet fever, such as the initial symptoms, the angina, the fever, the leucocytosis, and even the rash, may be explained by what we already know of the pathogenic powers of *Streptococcus pyogenes* and which probably in no small degree actually shares in their production, but there is no analogy in recognized streptococcus infections of the immunity conferred by scarlet fever even when mild. We have no evidence that scarlet fever leaves behind it any lasting immunity to streptococci, and we do know that the specific immunity which results from streptococcus infections in general is not at all marked and is only brief in duration. Consequently if scarlet fever is caused by a form of *Streptococcus pyogenes* this must be assumed to possess very pronounced and peculiar immunizing properties, of which as yet we have been unable to discover definite experimental or other evidence. There are other phases of this question that might be discussed with profit did space permit. For example, there is the reported lack of evidence of streptococcus invasion in certain instances of fulminating scarlatina.

Let us now for a moment consider acceptance of the streptococcal theory of scarlet fever from the point of view of the spread of the disease. This acceptance would seem to involve us in no special difficulty so far as the most important of the recognized modes of dissemination are concerned, namely, through contact in various ways




with materials from the throat; it is different, however, with respect to the question of the infectiousness of the skin and the reputed longevity of the scarlatinal virus. It is universally believed that the scales of scarlet fever patients are infectious far into convalescence. According to Weaver's careful study, the bacteria obtainable in the skin and scales of scarlatina are quite the same as those found on the skin in health. Raskin obtained streptococci from the skin in 4 cases in 20; Gordon's search yielded no positive results; Weaver found streptococci in skin cultures in one case in 15; and Dreyer (unpublished observation) failed to find streptococci on the skin of 30 cases. The conclusion is plain—if streptococci cause scarlet fever they reach the surface of the body so rarely that the infectiousness of the skin must be greatly overrated. Medical literature contains numerous instances of apparent conservation of the scarlatinal virus over long period of time—several years—whereas the longest time that Weaver[1] could cultivate streptococci from preserved scarlatinal material was 90 days.

Thus it becomes evident that there are rather definite obstacles to the unreserved acceptance of the streptococcus theory of scarlet fever. The view that the

specific cause of scarlet fever is not known[7] and that the streptococcus is a concomitant or secondary invader for the growth and activity of which the conditions in this disease are peculiarly favorable, seems to me to harmonize better with the facts now at hand. This view receives strong support from the fact that smallpox when fatal is practically always associated with streptococcus invasion,[8] so that the suggestion has been made that smallpox, too, is a streptococcus disease.[9] Perkins and Pay[10] dispose of this claim, however, by causing smallpox in the monkey with materials entirely free from streptococci, which by themselves, as expected, have no such effect.[11] It has been said that smallpox would be a relatively harmless disease were it not for the streptococcus invasion, and there are certainly good reasons to look on scarlet fever in the same light.

From the fact that there is no evidence in scarlet fever of increased activity on the part of pneumococci and certain related cocci that normally inhabit the throat, we may infer that the conditions in the scarlatinal throat are peculiarly favorable to *Streptococcus pyogenes*. Indeed, in view of the paramount importance of streptococci in the course and outcome of scarlet fever the chief significance of the pure scarlatinal virus would seem to lie in its power to open the door, so to speak, to streptococci. From this point of view the need for potent antistreptococcus remedies is as urgent and their eventual specific effects as logically explainable as would be the case were scarlet fever considered a streptococcus disease pure and simple.

One point remains. In view of the fact that streptococci grow in virulence in the susceptible animal organism it becomes our duty to guard carefully by adequate isolation against the transfer of especially virulent strains from patient to patient. We can understand from what we know of the dissemination of throat and mouth bacteria in coughing and other ways the great chance for such transfer when patients lie side by side in the same room. Perhaps the sad instances of several deaths from scarlet fever of children of the same family, sometimes spoken of as examples of family susceptibility to scarlatina, often result from the passage from child to child of especially virulent streptococci.

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## SOME SYPHILITIC DISEASES OF THE EYE.

RANDOLPH BRUNSON, M.D.
HOT SPRINGS, ARK.

Of all diseases of the eye probably syphilis is responsible for a greater number of ocular affections than any one disease known, so I can not, in a paper of this character, go into an exhaustive study of diagnosis, prognosis and treatment, but will confine my remarks to giving the essentials of diagnosis, and take up each subject as seen from the anterior aspect of the eye.

7. Whether the protozoon-like bodies described by Mallory (Jour. Med. Research, 1904, x, 483), in the skin of scarlet fever, the parasitic nature of which is corroborated by Duval (Virchow's Archiv, 1905, 179, 485), but questioned by Field (Jour. Exp. Med., 1905, vii, 343), have any etiologic significance is of course a question for the future.

8. Ewing: Trans. Assoc. Am. Phys., 1902, xviii, 208.

9. De Waele and Sugg: Arch. intern. Pharmaco-dynamie et Therapie, 1903, xii, 205; Münch. med. Wochschr., 1905; Centrbl. f. Bakt., I, 1905, xxxix, 324.

10. Jour. Med. Research, 1903, x, 195.

11. On account of incommunicability of scarlet fever to animals the investigator is without ready means to determine whether scarlatinal materials or microbes he may isolate therefrom have specific pathogenic powers.

### EYELIDS.

Secondary syphilitic ulcers may occur in the eyelids from the breaking down of a gumma originating in the skin or in the subcutaneous tissue and cartilage. The most frequent location of the lesion is in the skin, near the lid margin or below the inner canthus, though it may occur on the conjunctival surface of the lid. It manifests itself usually at a late stage of the disease and should be classified as a tertiary lesion. The fact that this lesion may occur after all other symptoms of syphilis have subsided necessarily makes a diagnosis rather difficult, especially if it is situated over the lachrymal sac; in this event dacryocystitis is apt to be confounded with it. It is at times difficult to differentiate between this lesion and epithelioma, as the latter occurs more frequently on the eyelids than elsewhere.

### CONJUNCTIVA.

The conjunctiva is very rarely affected primarily, but inflammation usually occurs when the iris and ciliary body are involved, the edema seen in these cases being caused by an obstruction to the return flow of the circulation. It has been my good fortune to see one case of gumma of the conjunctiva; this in a man 36 years old, who had been infected six years previously. The patient had received treatment for about three months after the initial lesion, and in the following year also he had taken more or less treatment, but, as all symptoms of syphilis had long since disappeared, he did not appreciate the necessity of further treatment, and the gumma of the conjunctiva was a result four years later. When I first saw him there was a round, hard mass, the size of a pea, glazed in appearance and almost white, situated at the sclerocorneal junction on the outer side of the right eye. Though he gave me a history of syphilis, a diagnosis was not made at the time, as I was uncertain as to the character of the trouble, and I requested him to return later in the week. On his return he told me that he had spent a very uncomfortable night with his eye. Examination disclosed a true broken-down gumma, ulcerated, and the whole surrounding tissue deeply injected. A salve of iodoform was prescribed to be used locally, and subcutaneous injections of the albuminate of mercury were begun at once, with iodid of sodium internally. After twelve injections, one given daily, and taking iodid up to 225 minims per day, the gumma completely disappeared, except for a slight contraction of the tissue.

For the past five years I have made a practice of examining the conjunctiva of each syphilitic coming into my office; my object in doing this was to find a mucous patch, but so far my efforts have been in vain. However, I expect some day to find one, as there does not seem to be any reason why they should not be found on the conjunctiva as they are elsewhere.

### LACHRYMAL SAC AND DUCT.

The lachrymal sac and duct is frequently invaded by syphilis through the nose. In all the cases of stricture of the lachrymal canal in syphilis which have come under my observation I have always been able to find the cause in the nose. Syphilitic rhinitis, both acute and chronic, is very common, and when we have great destruction of the nasal bones and membranes dacryocystitis usually occurs with varying severity.

### THE CORNEA.

Interstitial keratitis has its origin in syphilis in perhaps 60 per cent. or more of all cases, and the true form

is always hereditary. I have never seen a case caused by acquired syphilis, and believe the cases reported as such have simply been produced by iridochoroiditis, which has involved the deep layer of the cornea. Antonelli directs attention to the ophthalmoscopic appearance in congenital syphilis, namely: "A certain degree of pallor, sclerosis of the papilla, a massing of the pigment on the papillary border, a certain narrowing of the retinal arteries and a granular state of the retinal pigment." The symptoms of this variety of keratitis are a grayish discoloration at the periphery or some other part of the cornea. This color soon spreads over the whole of the membrane, which is infiltrated and its surface dull. At first the infiltration is translucent, it then becomes thickened and of a grayish tint, becoming darker until the iris is quite obscured. There is ciliary injection without congestion of the conjunctiva, lachrymation, photophobia and ciliary pain are also present, the latter due to an iritis which is nearly always present in these cases. The deep punctate keratitis of syphilis is situated in the deeper planes of the cornea; the iris, ciliary body and choroid are nearly always invaded. We have numerous small, deep infiltrations appearing in front of Descemet's membrane and in the center of the cornea. These infiltrations may become ulcerated in a few cases and leave very dense and permanent opacities.

A word in regard to the treatment of these forms of keratitis: I have never seen a case, no matter how ill nourished and cachectic the patient may have been, that small doses of mercury did not act in a most satisfactory manner from the very start. It seems to exert a tonic influence.

### IRIS AND CILIARY BODY.

The iris and ciliary body are perhaps more often invaded by syphilis than any other part of the globe, and syphilis is the common predisposing cause of iritis. About 70 per cent. of all cases of iritis are caused by this disease, and I have found in examining the histories of 1,500 cases of syphilis, reported in a previous paper,[1] that iritis occurred in over 3 per cent. of all cases. There are a certain number of cases in which the clinical aspect will not give any indication of the constitutional cause of the inflammation; so we are more or less dependent on the history of the case and other data to confirm our diagnosis. In syphilis there are a certain number of characteristic signs in a given number of cases which will allow us at once to recognize the etiology of the disease. The most palpable of these are the papules—small raised masses imbedded in the iris, usually not exceeding three in number and generally located in the pupillary zone, but they may be seen at the periphery of the anterior chamber, or elsewhere. They begin as small points, increasing in size, until finally, in a few cases, they may attain such size as to touch the posterior surface of the cornea. During this time their color changes from a reddish brown to a lighter shade, and on closer inspection we shall find numerous small vessels surrounding them. They may disappear completely, or leave small arch-shaped synechiæ. A white line is not infrequently seen at the bottom of the anterior chamber, due to the accumulated debris of broken down condylomata. At the pupillary edge of the iris, a rusty hue is sometimes observed, and is probably due to condylomatous masses, diffused throughout the tissues in that position. The posterior synechiæ in this form of iritis are suggestive of the etiology of the trouble, as they are broad and dark in color, thus differing in a marked degree from those of rheumatism, for instance, which are thin and light in color. This then, is the iritis of secondary syphilis, which is nearly always of a plastic type and has little tendency to recur. In nearly all cases attachment between the iris and the lens capsule takes place, unless the case is seen early.

Hereditary syphilitic iritis appears in the first few years of life, and also at a much later period. According to Hutchinson, the average age at which infantile iritis begins is five months, it affects females more often than males, attacks one or both eyes, and, though generally associated with a free exudation of lymph, is not much marked by redness of the eye. The cornea remains clear and the ailment is attended by few of the more severe symptoms met with in adults. Most of the cases show one or more of the signs of hereditary taint—as cachexia, psoriasis-like cutaneous eruptions, aphthæ or sores about the mouth, condylomata about the anus, or "snuffles." When iritis attacks other subjects, it may occur alone or with interstitial keratitis. If alone, the inflammation usually appears in the ciliary body, and spreads to the iris at a later stage, so we have an irido-cyclitis. It is very hard at times to recognize, as patients may show no signs of hereditary syphilis elsewhere. In other cases we may find associated with it, disseminated choroiditis, which is characteristic of syphilis. The iris reacts to light very sluggishly and ciliary congestion, purplish in color and patchy in distribution, is present. Sometimes a pupil may get blocked by a grayish layer of débris which seems to cling to the edge of the iris, and punctate deposits constantly appear in the cornea. Secondary glaucoma is a frequent sequel. In hereditary syphilis, iritis assumes the form of a serous irido-cyclitis and may appear alone or with interstitial keratitis.

Syphilitic cyclitis may be plastic, serous or gummatous, and is almost invariably associated with iritis; the symptoms are pain, diminished vision due to deposits upon the posterior surface of the cornea, precipitates in the vitreous, exudations between the iris and lens capsule, and ciliary injection. Galezowski, in studying symptoms of syphilis in the ciliary body, says:

1. Whenever syphilitic iritis is accompanied by punctate keratitis, either chronic or recent, areas of atrophic choroiditis will be found in the ora serrata.

2. In parenchymatous interstitial keratitis, when due to hereditary syphilis, disseminated plaques, which sometimes reach the posterior segment, are seen in the ora serrata; more often, however, they are confined to the ciliary region.

3. Diffuse syphilitic choroiditis, with disease of the vitreous, always presents atrophic alterations of the ora serrata, and the opacities of that humor are due to the latter lesion.

4. In ataxic atrophy of the discs, atrophic and pigment changes occur in the ora serrata.

5. In syphilitic inflammation of the cerebral or cerebro-spinal nerves, characteristic signs of the disease appear in the ora serrata.

Gallenga reports two cases of syphilitic gumma of the ciliary body, but I have never seen a case.

Before leaving the subject of irido-cyclitis, I wish to make a few remarks upon the pathogenesis of primary iritis of syphilis. Brailey says:

Almost all ailments capable of giving rise to inflammation of the iris are intimately associated with, if not actually caused by, micro-organisms. As regards syphilis, gonorrhea, tubercle, leprosy, influenza and relapsing fever, this fact will be disputed by none. Organisms have been described in many fevers—typhoid, smallpox and pneumonia—during recovery from which, inflammatory infections of the iris and ciliary body may occur. From all the facts brought to bear on the

1. Relative frequency of Iritis in Syphilis and Rheumatism, observed in 3,000 cases. Ophthalmic Record, November, 1899.

subject, it would indicate that syphilitic iritis is due to the presence of microbes.

Alexander believes that specific iritis is produced by vascular alterations, and points to the fact that Fuchs and Friedal have shown that the walls of the vessels of the iris are the seat of a gummatous degeneration. Brailey states that the ordinary form of the disease appears as an early secondary symptom during the time when the specific virus is diffusing itself, by means of the blood, throughout the entire economy. Nodular growths or condylomata are present in every case and are strongly suggestive of local irritation, such as might well be set up by bacilli deposited from the aqueous humor. Bronmer has given particulars of three cases in which concussion of the eyeball was followed speedily by local syphilitic disease.

In many cases of irido-cyclitis, the patient tells us that the disease was set up by some slight injury to the eyes. A case in question came under my care some months ago.

*History.*——— ——, aged 38 years, was walking along the street, carnival week, and a woman threw "confetti" into his face, some of which got into his left eye, producing at the time more or less irritation. Two days later, he came into my office with a typical case of specific irido-cyclitis. A history of syphilis was obtained, but he had never had iritis before, so it would seem that the bacilli deposited by the aqueous humor were there and only required some slight irritation to start them working industriously.

## RETINA.

That syphilitic retinitis, pure and simple, does exist, seems to be beyond question, as such careful and painstaking observers at Leibreich, Mooren Mauthner have reported cases, while Ole Bull reports its occurrence in half of all the syphilitic cases seen by him.

We have observed in cases of severe iritis, more or less irritation of the retina. During the past twelve years I have had exceptional opportunities for observing syphilitic diseases of the eye, and in this time I have seen at least three positive cases of syphilitic retinitis without the choroid or iris being involved. The three cases were all due to the acquired form of syphilis, and appeared from four months to seven months after infection. In one case the retinitis was preceded by iritis, but the latter trouble had entirely subsided without injury to the eye. The most remarkable incident, outside the rarity of such cases, was that none of these patients had been fully under the influence of mercury, though each had been using inunctions for several weeks previous to the discovery of retinitis. I will not go into the details of these three cases here, as I expect soon to make a further and more elaborate report. In two cases there were dust-like particles in the posterior part of the vitreous, producing a cloudy appearance in front of the papilla. In the other case this condition was absent. In all there was a grayish opacity of the retina, and particularly along the course of the blood vessels; small, white foci were seen towards the periphery of the retina, developing along the course of the blood vessels, berry-like in appearance and covering the vessels in places. The arteries seemed somewhat thinner, and the veins were much larger than normal.

Syphilitic hemorrhagic retinitis not infrequently occurs in the course of syphilis and usually in the tertiary period of the disease. Of course, the predominating clinical symptom is a great number of hemorrhagic spots of different sizes and shapes; dust-like opacities are seen in the vitreous, the retina appears opaque, the arteries are small and the veins are dark and large. Persistent headache is a constant factor in this disease until the patient is thoroughly under the influence of mercury and iodids.

Relapsing syphilitic central retinitis is a very rare affection; personally, I have seen only 1 case in about 2,000 cases of syphilis which have been under my observation. There is a sudden disturbance of vision, which disappears after a few days, to reappear. These recurrent attacks may keep up indefinitely. During the attacks the vision is much impaired. At first the vision is very good between the attacks, but later it is reduced. There is seen a slight shadow on the macula, but the papilla and surrounding field remain perfectly clear. Fine white points appear in groups around a grayish macula and during the intervals of attacks this cloudiness disappears entirely. In my case the trouble was cured after three months of heroic anti-syphilitic treatment. Three years have passed since the case was first seen and there has not been any recurrent attack.

Transitory recurrent bitemporal hemianopsia may be caused by syphilitic tumors affecting the chiasm. Oppenheimer regards this form of hemianopsia as a sign of basal syphilitic lesion.

Swanzy directs attention to the fact, that symptoms caused by syphilitic gummata at the base of the brain are frequently inconstant, that is to say, a nerve which is paralyzed to-day, may be found to perform its functions well to-morrow, while the paralysis of some other nerve may continue. In nearly all cases of hemianopsia and blindness brought about by gumma situated somewhere in the optic tract and chiasm, if the blindness is recent, we can, with a great degree of certainty, hope for useful vision, if not for entire relief. This, of course, can only be brought about through heroic anti-syphilitic treatment. Diseases of the blood vessels of the retina and iris caused by syphilis, while not very common, yet occur with sufficient frequency to attract attention.

Syphilis not only induces inflammatory changes in the retina as elsewhere, but frequently produces changes in the blood vessels similar to those seen in senile or albuminuric sclerosis. Blood extravasations, opacities of the vessels and sometimes retinal opacities are seen.

In syphilis, Haab attaches considerable importance as a diagnostic sign to decrease of the retinal vessels when the opacities of the walls appear as fine disseminated scales upon the arteries. He states further that other similar vessel-degenerations rarely show this appearance. New vessel formation is quite frequent in syphilis and takes place after hemorrhages of syphilitic origin.

## CHOROID.

Disseminated choroiditis is caused by syphilis in perhaps 80 per cent. of all cases. In acquired syphilis the disease makes its appearance in from six to eighteen months or possibly longer, after infection. In hereditary syphilis the disease comes on in the first three or four years of life, or probably at a later date. In the early stages, in the acquired form, we see perfectly round white spots of a pinkish hue. The retinal vessels are clearly seen as they pass over the spots. The next change takes place in the center of the spot which becomes very white; at the same time the pigment ring begins to show itself and gradually becomes darker. The pigment ring and other details now sharpen up and the enclosed surface appears as a dull, yellowish-white plaque. Sometimes little shreds of lymph are seen during this stage attached by one edge to the choroidal plaque and undu-

lating in the vitreous. Patches of complete atrophy appear, bounded by a ring of black pigment; the entire surface in this ring is white or bluish-white and glistening, and we cannot see any trace of the choroidal vessels or pigment, yet the retinal vessels go across without interruption. The appearance of the fundus, between the choroidal spots, is usually normal. When the inner layers of the retina become affected the case is always more or less serious and a loss of sight may take place either from atrophy of the disc or from detachment of the retina.

Iritis, interstitial keratitis and scleritis may make their appearance during the course of the disease. Liquefaction of the vitreous may take place with partial or complete dislocation of the lens. The occurrence of a group of yellowish-white flecks near the macula and of dust-like opacities of the vitreous, with change in the walls of the choroidal and retinal vessels, is nearly always characteristic of syphilis.

Syphilitic chorio-retinitis is always characterized at first by fine dust-like vitreous opacities and increased redness of the disc, which latter is surrounded by a halo of grayish discoloration. There is an absence of the patchy condition characteristic of choroidal inflammation alone. This form is frequently preceded by iritis. Night blindness is usually a marked feature. The field of vision rarely shows any marked diminution. In the early stages the diagnosis is quite difficult; there is a smoky appearance of the details of the fundus, however, which is characteristic. The vitreous opacities, increased redness of the disc and opacities of the surrounding retina, are frequently the only diagnostic signs.

Later, as the disease progresses, there is often found overfullness of the retinal veins, with a contraction of the calibers of the arteries and paleness of the disc.

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## POLYCYTHEMIA.

J. F. ALDRICH, M.D. AND LE ROY CRUMMER, M.D.
SHENANDOAH, IOWA. OMAHA.

The recent exhaustive articles[1] on this subject have changed our plans in considering the condition in detail and referring to the previous work which has been done on this subject, but cases are still so rare that we think it expedient to report this one in considerable detail. This case seems of especial interest in that while it has the entire triad of symptoms completely developed, it differs in some important essentials from the cases previously reported.

*Patient.*—Mrs. J. M. D., aged 53, first seen by Dr. Aldrich Jan. 11, 1906, complained of considerable dyspnea on exertion. She had also noticed that she had an immense growth in the left abdomen.

*Family History.*—This was negative. The father was living at the age of 86, and was in reasonably good health. The mother died at 50, from a "lingering consumption." The patient had waited on her mother constantly for three months prior to her death, but developed no symptoms following this exposure. She has two brothers living, aged 50 and 55 years respectively, and both in good health. Four sisters died in early infancy, the causes of their deaths being unknown to the patient. One brother died of a wound received in the Civil War when but 20 years old.

*Personal History.*—When a child the patient had eczema on the scalp and along the shins, and at about the same time, had a severe attack of ringworm. She also had measles, scarlet fever, chickenpox and mumps during childhood. She never had any of the other diseases, nor has she ever been seriously sick at any time since puberty. There was no history of typhoid or malaria, and she has never had symptoms which would indicate a tuberculous infection. Menstruation began at 14 and terminated in a normal climacteric at the age of 50. Before marriage she had dysmenorrhea, but was much better after marriage, and has considered herself normal in that respect marriage, and has considered herself normal in that respect ever since. She has borne six children, the latest eleven years ago.

*History of Present Condition.*—For eight years she noticed a redness of the face so striking at times that even the school children noticed it and would run past her house exclaiming: "Look out for the red Indian woman." During this entire period she had a feeling of fulness of the head and dizziness at times. This still continues, but occurs only at comparatively long intervals. Three years ago she first noticed a tumor in the abdomen, which enlarged rapidly, and at the end of the first year was as large as a cocoanut. This tumor grew slowly, but continuously, and she did not notice at any time a decrease in size. She never had any form of hemorrhage.

*Symptoms.*—The patient complained of extreme fatigue, a feeling of weight and dragging in the abdomen, and pressure over the bladder. She suffered somewhat from nausea, a slight distress after eating, and occasional attacks of diarrhea. She never had fever, but perspired easily. There had never been much loss of weight.

*Present Condition.*—Jan. 11, 1906. Patient was in fair flesh, had no difficulty in walking, and showed no trace of fatigue after rather a hard trip. The color of the face and hands was striking. The exposed skin had a dusky red color, and on closer examination, enlarged veins were seen in fine network throughout the skin. The conjunctiva presented the same appearance. The teeth and gums were normal; there was no tonsillar enlargement. The cervical glands, as well as those in other regions, were normal. The lungs were normal, save for a slight emphysema. The heart was normal in size and sounds, and there was no dulness of the mediastinum. Examination of the abdomen showed no ascites, no enlarged veins, and the liver not perceptibly enlarged. The entire left half of the abdomen was filled with a heavy tumor, which came out from under the costal border at the seventh cartilage, extending down to one inch to the right of the umbilicus. One inch below the umbilicus it turned and ran almost horizontally across to the antero superior spine of the ilium, and thence behind the crest of the ilium. There were three typical notches of the median edge, which, however, were very blunt. Careful palpation gave an impression that this tumor was thicker in the anteroposterior diameter than is usual with splenic enlargements. The length of the anteroposterior diameter from the costal border to the lowest point in the abdomen was seven and one-half inches. The tumor was seven inches from the extreme right edge to the point where it disappeared behind the crest of the ilium. The skin was everywhere mottled, but there were no enlarged veins except on the face and hands. There was no edema, but some tenderness on percussion over the sternum, tibia and other long bones. Urinary examination gave normal findings.

*Blood Examination* (Crummer).—

| | |
|---|---|
| Red blood cells (Thoma Zeiss) | 7,700,000 |
| White blood cells | 4,700 |
| Hemoglobin (F. M.) | 120 per cent. |
| Index | approx. 4/5 |

Smears stained by the Ehrlich's nitrophile and eosin-methylene blue method showed considerable variation in the size and contour of the red blood cells. There were many microcytes and a few pale-staining macrocytes. A few cells show slight poikilocytosis, and in almost every field polychromatosis could be recognized. Nucleated red cells were found in considerable numbers. While counting 200 white cells, 24 nucleated red blood cells were seen, which equals 6,600 nucleated red blood cells per c.cm. Five or six were typical normoblasts, while the others showed many characteristics of the megaloblastic type of cell.

The differential white cell count showed:

| | |
|---|---|
| Polymorphonuclears | 72.5 per cent. |
| Eosinophiles | 4.0 per cent. |
| Large lymphocytes | 8.0 per cent. |
| Small lymphocytes | 11.0 per cent. |
| Myelocytes | 4.5 per cent. |

1. Englebach and Brown: THE JOUR. A. M. A., Oct. 20, 1906. This article contains a complete biography.

*Treatment.*—Acting on the advice of Turk, the patient was placed on Fowler's solution, which, however, she did not stand very well, and a pill, containing arsenous oxid, .001 gm.; pepper, .020 gm.; and licorice, .050 gm., was substituted with the same bad results. The tumor mass was regularly given fifteen minutes' exposure to the Roentgen ray, and an abdominal support was ordered.

*Subsequent History.*—On February 11, the patient again presented herself for examination, feeling much better, and stronger in every way; the symptoms had practically disappeared. She had had eleven Roentgen-ray treatments. The tumor was smaller in size; its transverse diameter being four and one-half inches, while its longitudinal diameter was five and one-half inches. The anteroposterior diameter had diminished, and it had assumed more nearly the shape of the ordinary splenic tumor. On examination the urine was found normal in every particular. The blood pressure by the Riva Rocco (wide cuff) apparatus was 132 mm.

Blood examination on this date:

| | |
|---|---|
| Red blood cells | 6,048,000 |
| White blood cells | 5,500 |
| Hemoglobin | 90 per cent. |
| Index | approx. 3/4 |

The microscopic findings were the same as at previous examination.

Jan. 5, 1907: It has been impossible to make further blood examination of the patient, but a report was just received stating that the patient continued well during the spring and summer, was able to work, and was entirely relieved of pain and distress in the abdomen. She had an attack of jaundice during August and the early part of September, which gradually cleared up, and since that time she has been less cyanotic. In September the spleen began to enlarge again, but on taking Fowler's solution it gradually diminished in size and is now less than half as large as it was at the time of first observation. Now it does not extend to the median line or as low as the umbilicus. Subjectively, she feels better and stronger in every way.

This case presents the usual features of polycythemia in its characteristic form, as in cases hitherto reported. It is furthermore one of the few reported cases in which improvement has been definitely noted. Concerning the theories of pathogenesis applied to this case, we have, it is true, a history of exposure to tuberculosis before the disease began, which might support the theory of Rendu and Widal,[2] as to the tuberculous origin of this trouble, but careful examination showed absolutely no other signs of a tuberculous process, and it would hardly be fair to assume that this case was also one of localized splenic tuberculosis, particularly as the blood examination showed more definitely than in any of the hitherto published cases, the signs of an irritative lesion of the bone marrow (megaloblasts and myelocytes), thus in a great measure substantiating Turk's[3] assumption that polycythemia is in reality a primary disease of the red bone marrow.

2. "Splenomegalie tuberculeuse sans leucémie avec hyperglobulie et cyanose." Bull. et mem. de la société med. des hôp., 1899, III, p. 528.

3. Wiener klin. Wochschr., 1904, Nos. 6 and 7.

**Removal of Foreign Bodies from Female Rectum.**—Kakuschkin states in the *Russische med. Rundschau* for December that it is an easy matter to remove a foreign body from the female rectum if it is manipulated downward with two fingers of the hand introduced into the vagina. The perineum is pressed up and back by the other hand at the same time. In a personal case the nozzle of a syringe had dropped off in the rectum and the passage of stools failed to dislodge it, but it was readily manipulated downward with two fingers in the vagina. He remarks that the lower segment of the rectum belongs to the gynecologists, and that unless a foreign body is soon removed it is liable to be forced upward with the antiperistaltic movements.

# THE RADICAL MASTOID OPERATION.*

FRANK ALLPORT, M.D.
Professor of Otology and Clinical Professor of Ophthalmology and Otology, Northwestern University Medical School, etc.
CHICAGO.

*(Concluded from page 1092.)*

Ballance, of London, makes a plastic operation that is used by many operators and undoubtedly yields good results. He cuts through the inferior wall of the cartilaginous meatus (Fig. 27) from its tympanic end to the inferior portion of the concha. This incision is then curved (Fig. 28) upward and backward until the level of the anterior beginning of the helix is reached where it stops.

This cartilaginous flap is thinned of all possible superfluous tissue, and sometimes of some of its cartilage, and is then turned back and the curved portion fastened with through and through sutures (Fig. 29) to the large anterior mastoid flap (Fig. 30). The parts are thus placed in position (Fig. 31) and the meatus expanded and forced against the bone as well as possible by firm gauze packing (Fig. 32). Some operators do not trust to the various flap operations to epidermize the bone cavity, and claim surer and speedier results by grafting skin into the cavity, either at the time of primary operation or at a secondary operation performed in from ten to fourteen days after the original procedure, by first completely reopening the wound, then grafting and again closing the wound, as recommended by Ballance. I do not use grafts at all unless in the subsequent healing of the case they become indicated, which I find to be rather seldom; nevertheless, there is no good reason for not using them and they undoubtedly expedite and assure perfect healing. Such skin grafts may be very large as recommended by Ballance (Figs. 36, 37, 38), who usually finds one graft to be sufficient, or smaller as proposed by Jansen and others, but of whatever dimensions they may be used they should, of course, always be cut as thin as possible by a sharp flat razor, the blade being lubricated by a warm normal salt solution. The graft may be transferred from the razor to a warm wet spatula (Fig. 34) by means of needles (Fig. 33) with handles, and then placed in its position on the bone by the same instruments, being, of course, careful to wipe the parts as dry as possible before the graft is permanently placed. It may be coaxed into its position by firmly twisted cotton on an applicator or by the "stoppers" (Fig. 35) as devised by Ballance. The grafts may be held in position by small balls of cotton dusted with aristol or xeroform powder, or Ballance recommends that the entire operative area be covered first with gold foil and then packed with small antiseptically-dusted cotton balls or with narrow, dry gauze (Fig. 39) and allowed to remain for one week and then removed by the meatus, as, of course, the post-auricular wound is immediately closed after the placing of the grafts, packings, etc. Some operators graft by placing either large or small pieces of tissue on the raw surfaces, through the meatus, and holding them there by small pledgets of gauze or cotton. This procedure is performed at varying times after the major operation, some preferring to do it at the first dressing, others a little later, and some only grafting at all when obstinate, unhealed surfaces call for such a procedure.

* Figures 42, 43, 44 and 45 are omitted. They will appear in the reprints of this article.

AFTER TREATMENT.

Leaving the subject of skin grafting now and taking up the after treatment of cases on which radical mastoid operation has been performed, it may be said that the bandage should remain in position, unless contraindications occur, for three, four or five days, when it should be carefully removed with an abundance of irrigation to avoid pain and injury. The area operated on should be thoroughly irrigated, cleaned, soaked with some antiseptic solution, dried, dusted with xeroform powder and firmly repacked with gauze and then bandaged. I believe many excellent operations are spoiled by poor after treatment, and by this I refer especially to poor packings, as exuberant granulations are the menace of good healing. These cavities should be kept tightly packed until dermatization is well under way. It should be remembered that in this large, surgically produced cavity are several sub-cavities of varying sizes and depths. In the first place there is the large antrum and mastoid cavity, that should be kept firmly packed to its utmost recesses. This cavity being back of the meatus, and, therefore, somewhat out of sight, is apt to be neglected by the dressing surgeon, in which case exuberant granulations will speedily form and unpleasant and embarrassing complications will surely occur. Then there is what is left of the osseous meatus, with the inner tympanic wall at its extremity. This must be kept firmly packed, as granulations will spring up and occlude the meatal space, thus hindering and sometimes nullifying the results of a good operation. There is also a somewhat curving, gutter-like concavity, representing the aditus ad antrum, connecting the tympanic and antral cavities, in which exuberant granulations are likely to form, with their embarrassing consequences, where great pains should be taken in the packing (Fig. 40).

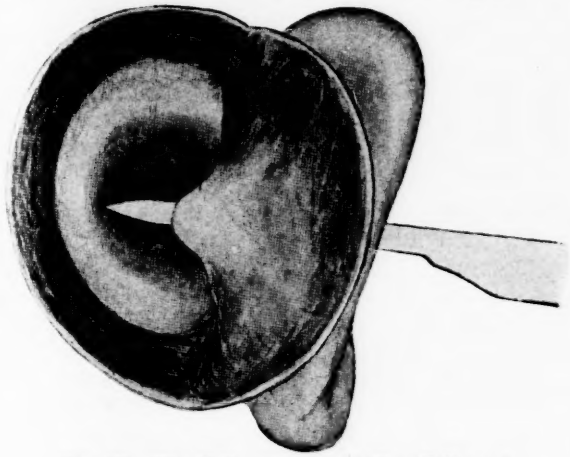

Fig. 27.—The Ballance flap. (After Ballance.)

Fig. 28.—The Ballance flap, showing curve of incision. (After Ballance.)

The general custom among surgeons is to pack these wounds with a single long strip of gauze, but in doing this I have found it impossible to accurately and firmly pack all the different sub-spaces, as adequate pressure of gauze in one place will move it from its position in another, and besides this, where so much gauze is being used in a continuous strip it is impossible to see just what is being done. I, therefore (after the first dressing) use several pieces of gauze, which are separately packed into the different cavities. In the first place, a very small piece of gauze is packed into the gutter-like concavity connecting the tympanic and antral cavities. To do this accurately a small narrow-edged packer (Fig. 41) is necessary, and for this purpose I employ an especially devised instrument, which is narrow, has a roughened edge, and readily carries the gauze on its point. After this little pledget has been placed another small piece of gauze is packed against the inner tympanic wall. A longer piece may now be packed backward, upward and inward into the antrum and mastoid space and firmly tucked into position with the bent packer so that no loose end drops down into the meatal space to obscure our vision. The remaining space may now be packed with gauze, great caution being taken not to displace any of the previously placed pledgets. In this way all important cavities are firmly and permanently packed and the growth of exuberant granulations rendered unlikely. It is surprising

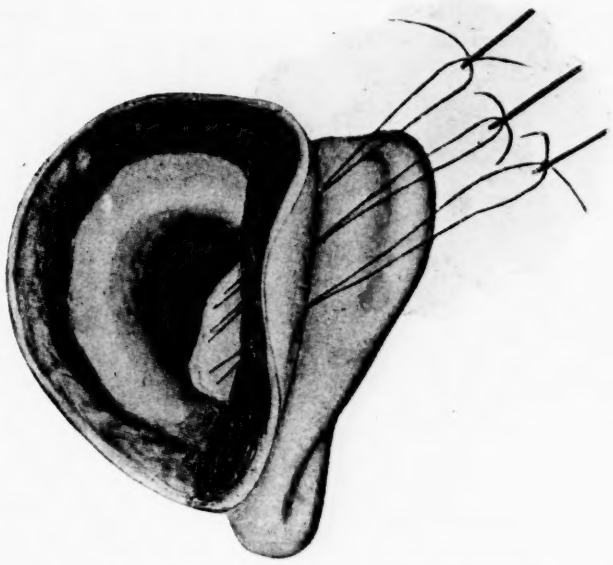

Fig. 29.—The Ballance flap. (After Ballance.)

Fig. 30.—The Ballance flap. (After Ballance.)

how beautifully cases progress toward a speedy cure under this method of packing, and I urge on mastoid operators its faithful trial.

The dressing should be repeated in two days and then again in two days, when the sutures should be removed. The original forceps as devised by Michel for the removal of metal sutures have flat surfaces on the inner aspects of the two jaws. It is, therefore, very difficult to engage the middle of the bent suture between the two blades, which is quite necessary in order to spread the two extremities of the suture so that the sharp points may be released from the flesh. I have, therefore, modified these forceps (Fig. 24), making the upper jaw convex and the lower jaw concave, and roughening both inner aspects, which engages the suture and releases it much more readily. The dressings should be repeated every two days until the mastoid wound is firmly united, when the bandage may be discarded and the dressings, treatment, etc., carried on each day through the meatus. As soon as possible, or, in other words, as soon as the reasonably dry appearance of the parts will permit, the dressings should be made under dry conditions, and mopping the tissues with cotton or gauze should replace the process of irrigation, after which insufflations of xeroform or some other antiseptic dusting powder should be made before the gauze packing is carefully and firmly replaced. Nevertheless, from time to time, mixed secretions will accumulate in the ear and necessitate thorough irrigation, followed by the use of some antiseptic solution, xeroform, etc., always, however, keeping the meatus firmly packed to the very end of the canal in order to maintain a capacious opening and prevent strictures. It is rarely necessary to keep such patients in the hospital for more than two weeks, after which they may present themselves at the office for daily treatment. In my experience these cases may be dismissed as cured in from ten to twelve weeks, some cases being cured in shorter time and some, of course, taking much longer. They should, however, all visit the surgeon four or five times a year to have the enlarged and irregular meatus thoroughly cleansed of cerumen, desquamated epithelium, etc., which, if allowed to remain, would ultimately produce an unhealthy condition of the parts. The remarks made by Dr. Dench of New York[2] on this phase of the results of the radical operation are so true and so comforting to both surgeon and patient that I take the liberty of quoting Dr. Dench's own words.

Fig. 31.—The Ballance flap. (After Ballance.)

Fig. 33.—Needle for transferring graft to spatula.

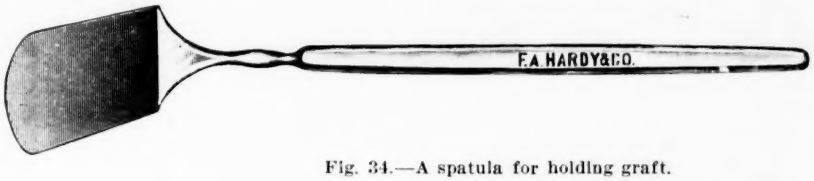


Fig. 34.—A spatula for holding graft.

Fig. 35.—A stopper for coaxing graft into position.

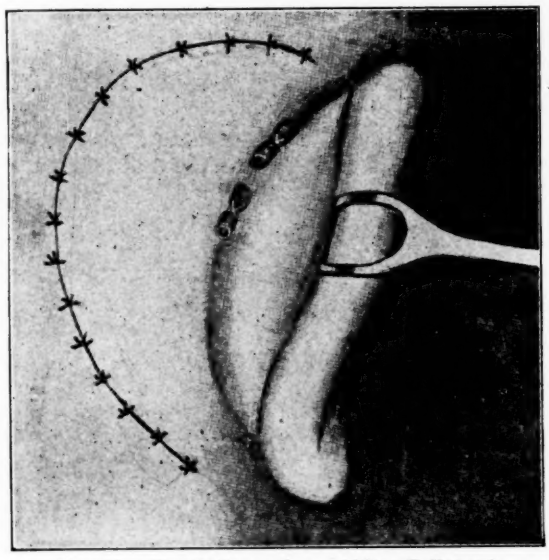

Fig. 32.—The Ballance flap. (After Ballance.)

> Even in those cases where the cure has been considered perfect, it is not uncommon to have the patients return, at intervals of from three to four months to one or two years, complaining of some discharge from the external auditory canal. An examination will show the entire cavity filled with a mass of desquamated epithelium, on the removal of which a small amount of pus may be found. If this accumulation has remained in the canal for a considerable period of time, desquamation of the epithelial lining of the cavity may have taken place, either completely or over certain areas. On removing the epithelial mass the cavity certainly looks far from healthy, and one unaccustomed to this condition would say that the radical operation had been a failure. If the cavity is simply sterilized with an alcoholic solution of bichlorid of mercury, and then dusted with some bland non-irritating powder, such as boric acid, xeroform, zinc oxid, or, in fact, any sterile powder, the cavity immediately becomes dry. In other words, the apparent relapse in so many cases is due simply to the fact that the integument lining the middle ear cavity and the mastoid cells, is improperly nourished. This integument forms the lining of a blind pouch where it is subjected to increased temperature, increased moisture, the absence of light, and no circulation of air, these latter conditions being essential to the proper nutrition of the normal skin. Moreover, it must be remembered that this tegumentary lining is applied closely to the bony walls of the cavity, with very little connective tissue substance intervening. It is not strange, therefore, that desquamation should take place from time to time, in such a cavity, and that the desquamated epithelium, if allowed to remain in position, should gradually accumulate until the cavity becomes completely filled with these epithelial cells.. The pressure of these cast-off cells causes superficial ulceration of the underlying

2. The Laryngoscope, October, 1906.

tissue so that complete desquamation of a cavity of this kind frequently takes place. These attacks of desquamation of the cavity occur less and less frequently as time goes on, because the integument gradually adapts itself to its new habitat, and in the course of time is able to conform itself to its anomalous position. These attacks of desquamation should not be looked on as a recurrence of the otitis. As before stated, they are easily relieved by the removal of the epithelial detritis, and the sterilization of the walls of the cavity.

It should not be forgotten that in case of genuine cholesteatomatous masses having been discovered and removed it usually will be best to maintain, at least for a year or so, a permanent post-auricular opening by packing instead of suturing the mastoid wound. When thought desirable such openings may ultimately be closed by a simple plastic operation.

The surgeon is usually asked what will be the effect on hearing if a patient submits to the performance of the radical mastoid operation? In my experience, while a very few cases have suffered a diminution of the function of hearing, yet a great majority of my cases have either had their hearing improved or at least not impaired. It must be remembered that before the operation is performed serious pathologic changes in the tympanum have occurred, such as retracted ossicles, cicatricial bands, etc., all of which must surely impede the passage of sound waves to the labyrinth, and it is quite possible, and, indeed, in the light of experience, exceedingly probable, that a complete clearing away of these obstructive pathologic elements will be likely not only to not interfere with hearing, but to actually improve it.

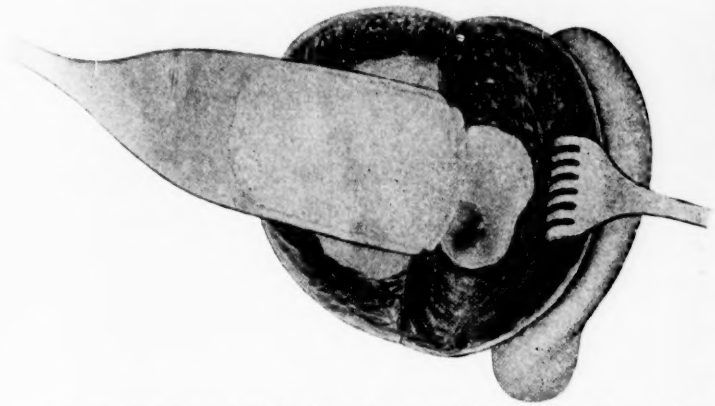

Fig. 36.—The spatula placing the graft in position. (After Ballance.)

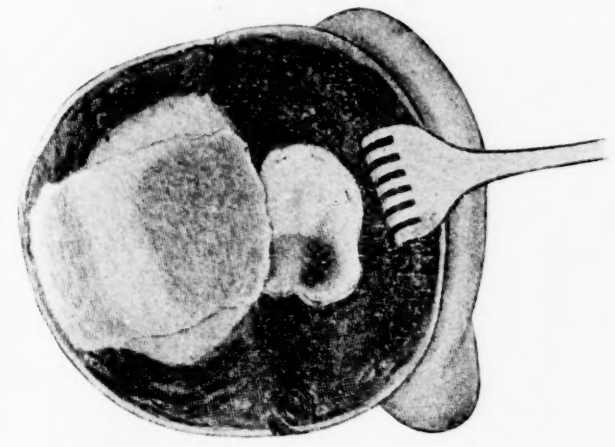

Fig. 37.—The spatula has just been withdrawn. (After Ballance.)

For some time past I have derived much satisfaction from the use of rotary burs (Fig. 45) driven by the Victor electric engine (Fig. 43). This engine is simple, strong, easily controlled and always ready, and I find myself using the engine more and other instruments less. While I never expect to depend on the engine alone, I believe it to be a most useful addition to our armamentarium.

I am aware of the fact that the radical mastoid operation is not popular with some surgeons, who regard such procedures as almost unwarrantable unless distinct and menacing operative indications are present. In other words, they do not advocate this operation for the relief of intractable purulent otorrhea, or at least apparently are never willing to admit the intractability of an aural discharge. For the benefit of such conservative surgeons I wish to close this article by a quotation from no less a man than Ballance[3] of London, who makes use of the following language, which, I am confident, will be substantially endorsed by most of the world's best otologists:

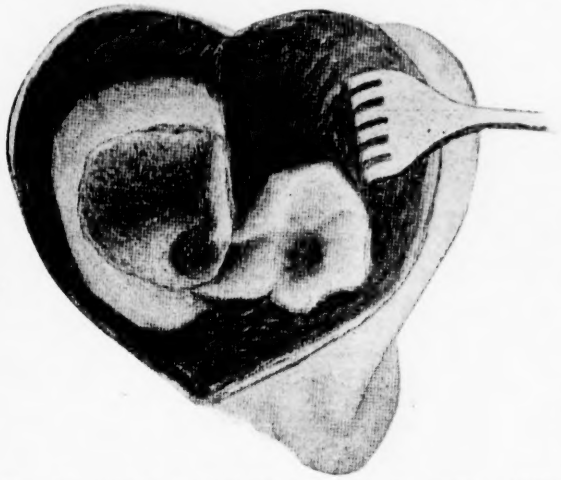

Fig. 38.—Commencing to coax the graft into the cavity. (After Ballance.)

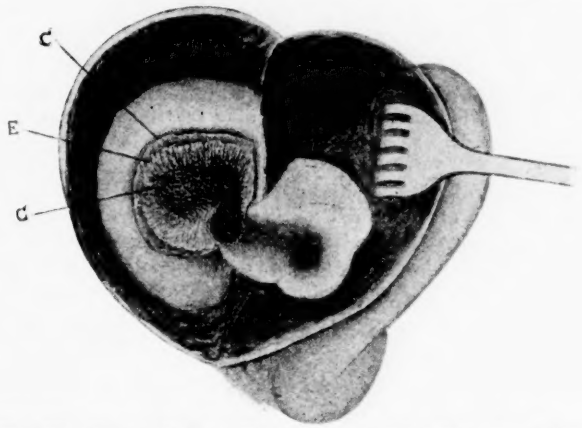


Fig. 39.—The graft in position, covered with gold leaf. C, bone; E, Graft; G, Gold leaf. (After Ballance.)

I have no longer any doubt that all cases of chronic purulent discharge from the ear should be treated by the complete operation, though I am aware that in some cases the disease has been rendered latent by the removal of ossicles alone or even by prolonged systematic dressing through the meatus. No one potters with a chronic empyema because some few acute cases recover with a single aspiration. It must be either war or peace. The lethal complications that we meet with are not

3. Lancet, Sept. 30, 1905.

seldom the outcome of the stammering mind of Mr. Ready-to-halt. The armed neutrality which promises operation if the need arises was, and is, the orthodox plan and has much to say for itself; but as Carlyle remarks, "The two internecine plans collapsing into one, that is the clearly fatal method." The great majority, if not all, of the chronic cases have commenced as an acute disease and it is an imporant practical question, how long may they be regarded as remaining so? That is, after what interval should the complete operation and not the so-called operation for acute disease be performed? Many cases in which the operation for acute disease has been performed subsequently require the complete operation and I am now of opinion that in any case requiring operation after six weeks discharge the surer treatment is the complete operation. The operation for acute disease is an incomplete procedure and therefore uncertain in its results; the bridge is not divided, the abscess is incised only at its two extremities, the narrow neck of the antrum provides only imperfect drainage, and is liable to become blocked by granulations. In cases of ingravescent appendicitis no surgeon would dare to call himself a late operator, but no one who has attended meetings at which the treatment of temporal bone disease has been debated can fail to be struck with the fact that the orators seem to plume themselves on avoiding operation. Is this a logical position to take up in treating a disease which is also ingravescent and which has perhaps a history of twenty years' standing, which may be tuberculous, and which in any case is liable to infect other parts of the body? The best results both to the hearing and to the health of the patient in suppurative temporal bone disease are obtained by early and complete operation. No surgeon would leave a sinus leading to diseased bone in the tibia for twenty years, or even for one, however cleverly he might be able to irrigate it or tickle it with antiseptic powders and cotton-wool. In mastoid disease, as in Bunyan's allegory, the Messrs. "Hopeful," who are persuaded to stray along the easiest going of By-path Meadow, will not escape the crab-tree cudgel in the dungeons of Giant Despair."

Fig. 40.—Showing the completed mastoid operation and the cavities for packing. A, gutter-like concavity connecting the attic and antrum, representing the partially obliterated aditus ad antrum; B, promontory; C, antrum space; D, mastoid space; E, location of the facial nerve; F, fenestra ovalis; G, fenestra rotundum.

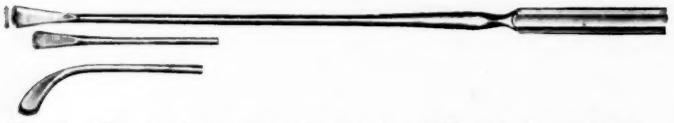

Fig. 41.—Showing the narrow edged packer; different sizes and shapes.

72 Madison Street.

## PULSUS PARADOXUS IN PERICARDITIS WITH EFFUSION.

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Pulsus paradoxus is one in which, during inspiration, the pulse becomes feeble or imperceptible. Since the time of Griesenger and Kussmaul pulsus paradoxus has been observed in a variety of pathologic conditions. F. Rigel[1] classifies these conditions as follows:

1. Mechanical interference with the large veins and aorta, as in Kussmaul's case. Here the heart is unaffected.
2. Obstructions in the air passage, causing an increased negative intra-thoracic pressure, which inhibits the heart's action.
3. Lowered activity of the heart.

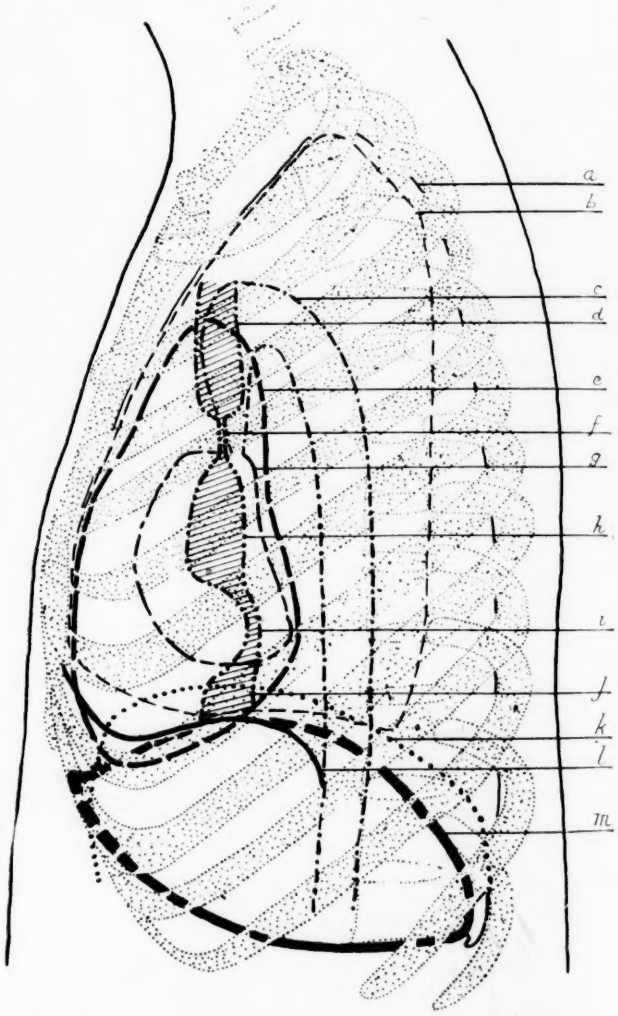


Fig. 1.—View of organs from left side. a, Parietal pleura; b, left lung; c, aorta; d, superior vena cava; e, pericardium; f, collapsed superior cava; g, heart; the heart is curved as shown in Figure 2, so that this projection is much thicker than the heart really is; h, right auricle; i, collapsed inferior cava; j, inferior vena cava; k, right cupola of diaphragm; l, central tendon of diaphragm; m, left cupola of diaphragm.

Pulsus paradoxus is a distinct variation from the normal, consequently it is pathologic and must have a cause. As pulsus paradoxus has been observed in a variety of conditions, its causes must vary, but in each condition this cause should be constant. From a clinical point of view pulsus paradoxus should be a sign of the existence of its cause, and the importance of this sign must depend

1. Deutsch. med. Wochschr. xix, 1903, 345.

the nature of the pathologic condition. From a prognostic point of view pulsus paradoxus is not of especial differential importance, but as it does not exist throughout the entire course of a given clinical picture, pulsus paradoxus heralds the development of a stage in the clinical course of a disease.

Recently I have had an opportunity to study the cadavers of two individuals who had pericardial effusion at the time of death, and in this paper I shall attempt to show the physical explanation of pulsus paradoxus and its significance in cases of pericarditis with effusion. The material for this paper was obtained from Dr. C. M. Jackson, to whom I wish to express my thanks.

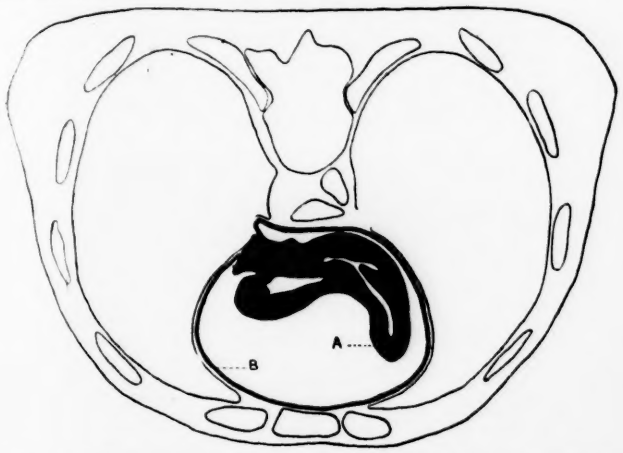


Fig. 2.—Transverse section of body showing flattened condition of the heart (A) and its relation to the pericardial wall (B).

The cadavers were injected with formalin and allowed to harden, after which they were transversely sectioned. Drawings and measurements of the sections were made while the material was fresh. From these data the several organs were projected as shown in the figures. By this method the position of the organs at the time of death was preserved and have been faithfully projected.

CASE 1.—The cadaver is that of a fairly well-built male negro, aged 30. On examination, left-sided pleurisy with a very small effusion, adherent right pleurisy and pericarditis

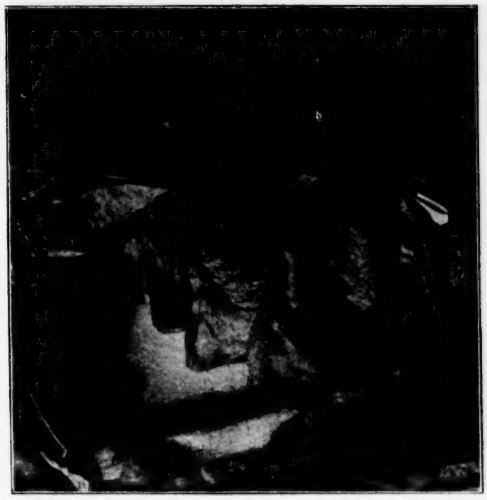

Fig. 3.—Section showing the superior portion of the pericardial sac and the collapsed superior vena cava through which has been passed a piece of paper.

with effusion were observed. In Figure 1 the general relationship of the organs is very well shown. Only those points of immediate interest will be described.

The heart (Figs. 1 and 2) and the superior cava (Fig. 1, d) are both collapsed, and the lumen of the superior cava is Y-shaped (Fig. 1, f) from the point where it enters the pericardium to the right auricle. In Figure 3 is seen a piece of paper that has been passed through the vein from above. The superior cava above this constriction was distended with blood.

The inferior cava is collapsed (Fig. 1, i). In Figure 4 a piece of paper has been passed through the vein from below. Below the collapsed portion the vein was distended with blood.

CASE 2.—Cadaver is that of a male negro, aged 29, well formed and fairly well nourished. Examination revealed tuberculous consolidation, with a small cavity formation in the left lung, and pericarditis with effusion. In amount the effusion was about the same as in Case 1. The relative displacement of organs is also similar to Case 1. The heart, however, and venæ cavæ are greatly distended (Fig. 5).

In the first case the venæ cavæ within the pericardial sac are collapsed; in the second case, distended. The conditions here are flexible walled tubes (venæ cavæ) passing into and partially through a distended sac, the walls of which are flexible and elastic (pericardium); consequently the degree of distension of the veins must depend on the relationship between the intravenous and intrapericardial pressures. If the venous pressure is greater the veins must be distended; if less, collapsed. But if the pericardial pressure is sufficient to collapse the veins no blood can enter the heart and death must

Fig. 4.—Section just above the entrance of the inferior cava into the pericardial sac. A piece of paper has been passed through the collapsed lumen. In front of the paper the depression of the pericardial wall into the distended vein is well shown.

follow. During life, then, the pericardial pressure must remain below that in the veins. If the venous pressure is sufficient to distend the veins a relatively normal amount of blood will flow to the heart.

The pericardial sac is larger than the heart contained therein; consequently a small quantity of fluid may collect in the sac without materially changing the pericardial pressure. But if the fluid continues to collect, the pericardium must be more or less distended and the pericardial pressure positively increased. Owing to the negative, or slightly positive, pressure within the veins a relatively great effect is produced on them by a small increase in the pericardial pressure. This increase in pericardial pressure must, in a proportionate degree, constrict the venæ cavæ (stenosis of venæ cavæ). This constriction must obstruct the flow of blood through the veins, producing a congestion and rise in venous pressure. This rise in venous pressure causes the blood to either dilate the venæ cavæ to the normal or to flow faster through the constricted portion. With each increase in the pericar-

dial pressure the veins must be further compressed or obstructed, producing additional congestion and rise of venous pressure. This process must continue until the limit of venous congestion and pressure is reached.

As the venous pressure changes during inspiration and expiration, there is at all times a maximum and minimum venous pressure. The pericardial pressure must be lower than the minimum pressure or the veins must be closed during the period of lowest pressure. This procedure would cause additional congestion and a rise of venous pressure above that in the pericardium.

The thick, strong pericardial wall, when distended by a pressure almost as great as that within the veins, can not be influenced as easily as the thin walls of the veins by the respiratory change in intra-thoracic pressure. Consequently the pericardial pressure remains during inspiration and expiration more constant than the venous pressure.

approach the venous pressure. As it rises it must pa[ss] the minimum venous pressure to remain for a time a[t] various points between the maximum and minimu[m] venous pressure.

Whenever the pericardial pressure is greater than tha[t] in the veins the latter must be constricted or collapsed. The degree of constriction must be determined by the difference in pressure. The flow of blood to the right heart must decrease proportionately to the constriction of the veins, as further rise in venous pressure is impossible. The lower venous pressure is during inspiration. Consequently, the greatest constriction of the veins occurs, and the minimum quantity of blood flows to the heart, during inspiration. During expiration the venous pressure rises above that in the pericardium; the veins are dilated and the maximum quantity of blood flows to the heart. This maximum (expiratory) and minimum (inspiratory) flow of blood to the heart must

Fig. 5.—Section through lower portion of pericardial sac. The coagulated fluid surrounds the lower portion of the heart. To the subject's right is seen the lower portion of the distended right auricle and inferior vena cava.

The venous congestion and rise in pressure become a compensatory congestion and a rise in pressure to compensate the pericardial pressure in exactly the same sense as the left auricle dilates and creates additional pressure to compensate a stenosis in the mitral opening, and as such must be subject, in a measure, to the same laws of reserve forces and broken compensation to which the heart chambers are subjected.

When the limit of venous congestion and pressure has been reached each rise in pericardial pressure is not followed by a rise in venous pressure; the veins begin to fail to compensate the pericardial pressure, and there develops a broken compensation in a compensatory venous congestion. The pericardial pressure may now continue while the pericardial pressure remains between the maximum and minimum venous pressures, or during the stage of broken compensation in the venous congestion.

The amount of blood entering the right heart must determine the condition of the pulmonary circulation, and this in turn determines the condition of the general circulation. The diminished amount of blood during inspiration gives lowered arterial tension—rapid and small pulse. The increased expiratory amount of blood gives a rise in arterial tension—decrease in pulse rate and increase in volume. This is the pulsus paradoxus. As the pericardial pressure approaches the maximum venous pressure the degree of pulsus paradoxus increases.

sus paradoxus in pericarditis with effusion is caused broken compensation in a compensatory venous con- tion. If this is so pulsus paradoxus is a sign of en compensation in the venous congestion, and de- s the time when the pericardial pressure must be uced or death may at any time follow—due to con- ction of the venæ cavæ beyond the point when suf- ent blood to maintain life can enter the right heart.

Pulsus paradoxus should appear relatively early in s with thick, strong pericardial walls, and relatively late in thin, elastic pericardial walls.

SUMMARY.

1. Pericardial effusion produces stenosis of the venæ cavæ.

2. This stenosis is relatively compensated by a rise in venous pressure.

3. This compensation fails when the pericardial pressure is greater than the venous pressure.

4. Owing to respiratory change in venous pressure the degree of broken compensation varies in inspiration and expiration—greatest in inspiration, least in expiration.

5. The variation in compensation carries varying quantities of blood to right heart (and to general circulation)—least in inspiration, greatest in expiration.

6. The respiratory variation in quantity of blood passing to general circulation is sufficient to explain pulsus paradoxus.

NOTE.—Since writing the above article Franke[2] calls attention to venous and hepatic compensation in cases of tricuspid insufficiency, and likens their action to that of the right ventricle in mitral lesions.—W. J. C.

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## DRAINAGE OF THE HEPATIC DUCT,

### CONSIDERED ESPECIALLY IN SERIOUS INFECTIOUS PROCESSES OF THE LIVER.

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In a recent paper[1] relative to the advantages of surgical treatment of biliary infection resulting in hepatic cirrhosis, I pointed out that the large number of cirrhoses represented the last stage of an irritative process in the liver and were in reality chronic hepatites originating from infection. Biliary cirrhosis is at the present time considered as infectious radicular angiocholitis, either subacute or chronic, and consequently it is quite logical to treat the pathologic condition like any infectious angiocholitis; in other words, by drainage of the gall bladder in order to give exit to the septic bile. In order to obtain a successful outcome, however, the drainage should be instituted at a time when the hepatic cell has not been destroyed by a sclerous process resulting from the infection. On the other hand, a new conception has come to light which accords to infection a part in the pathogenesis of vascular cirrhosis; consequently it is logical to foresee that drainage of the gall bladder will be the method of choice, because it seems to very favorably act on the intrahepatic venous circulation. As the title of this paper indicates, the question of drainage of the hepatic duct will be considered particularly from the standpoint of serious infectious processes of the liver, either arising from calculi or other sources. This form of drainage is indicated when there is possibility of biliary retention, because it has been amply proven that when there is an obstruction of the principal biliary tracts, retention of bile follows with an increase in size of the liver and dilatation of the hepatic duct, which renders drainage from this canal fairly easy to realize. Drainage of the hepatic duct does not appear any more complicated than other surgical interferences on the biliary tract, and, although in some instances it may be difficult, the excellent results that it has given should encourage surgeons to continue in this direction and to employ it systematically in every case where it is indicated.

As to the technic of drainage of the hepatic duct, there are three principal methods along with a few others which may be considered as possessing special applications. In the first place, we have drainage of the cystic duct and gall bladder. The latter having been opened, a drainage tube is introduced through the dilated cystic duct down to the hepatic duct; in other words, this being complementary to cholecystostomy in general. Secondly, we have drainage by the choledochus after incision of this duct, the drainage tube being pushed down to the hepatic duct. Both of these procedures may be classified under the head of indirect drainage of the hepatic duct as distinguished from the third procedure, which I would call direct drainage of the hepatic duct because the canal is directly incised and a drain introduced into its lumen. As to exceptional methods we have two, namely, transhepatic hepaticostomy, the incision being made directly through the hepatic parenchyma, followed by opening the dilated hepatic duct. The second technic may be termed infrahepatic hepaticostomy. Here the incision of the dilated hepatic duct is made directly into the latter as it projects under the anterior border of the liver. The first three procedures are employed currently according to the given case, while the last two so far have been employed in a restricted number of cases only. Direct drainage of the hepatic duct was, I believe, undertaken the first time by Cabot in 1892 during hepaticostomy for calculi, and I will now endeavor to demonstrate how this duct may be reached, explored and directly drained.

The hepatic duct is deeply seated and hidden by the anterior border of the liver and transverse colon, which usually appear in the abdominal incision. It is not, then, to be wondered at that a number of abdominal incisions have been advised in order to offer the largest operative field so as to facilitate manipulations deep down in the abdominal cavity. One important point must first be considered. I refer to the position given to the patient on the operating table. A reversed Trendelenburg position was advised by Elliot in 1894, so that the patient's head would be raised and the pelvis lowered allowing the intestinal mass to gravitate toward the pelvic cavity and thus recede from the region of the liver. Other operators simply have the patient placed horizontally. Mayo-Robson's idea of inserting a hard cushion under the dorso-lumbar region is, I believe, the best, because it more freely exposes the field of operation and consequently facilitates the surgical maneuvers.

Considering, now, the various incisions which have been proposed, Kehr employs a bayonet-shaped cut (Wellenschnitt), commencing at the xyphoid process and carried vertically down the linea alba and then brought obliquely to the right, parallel to and two fingers' breadth from the costal border, and then, again becoming vertical, is continued nearly to the middle of

2. Wien. klin. Wochschr., 1906, xix, 956. Extract in Am. Jour. Med. Sci., 1907, cxxxiii, 153.

1. Clinical Journal, London, Sept. 19, 1906.

the rectus; in other words, about on the level with the umbilicus. In this way the fibers of the rectus muscle are cut obliquely through at their internal half by the intermediary line of incision, but the external half of the muscle remains intact. This incision gives an easy access to the entire biliary tract, while at the same time section of the rectus, being only partial, facilitates the repair of the abdominal wall. Oblique incision parallel to the border of the ribs, vertical, median or lateral incisions with perpendicular section of the rectus have also been proposed, but in reality it would appear that these incisions, although fairly good, do not give the same facility as the one devised by Kehr. To my mind, however, the most important point is the use of the pillow as recommended by Mayo-Robson, the nature of the incision being of lesser importance.

When the abdomen is opened, the hepatic canal is sought for, a broad retractor being placed under the lower border of the liver, which should be pushed up under the ribs as much as possible, while a second retractor pushes the left border of the abdominal incision downward and to the left, including the transverse colon and duodenum. Gauze sponges should be placed under and around the retractors to protect the peritoneal cavity from biliary infection. The gall bladder is first examined and if found distended is easily exposed, but if the organ is retracted it may be quite hidden by adhesions. Following the lower aspect of the gall bladder, when it has been exposed, the cystic duct is felt, and by following this canal the fingers will reach the hiatus of Winslow, which is often very difficult or perhaps even impossible to recognize on account of adhesions uniting the gastrohepatic omentum to the posterior layer of the minor omental cavity. If one can penetrate the hiatus, nothing is easier than to seize the gastrohepatic omentum between the fingers and its upper part and to explore the hepatic duct in order to directly operate on it. Usually, however, in the cases under consideration, with a long history of angiocholecystitis, it is impossible to recognize the hepatic duct in the midst of the adhesions. Under these circumstances one should, so to speak, endeavor to work down on it through the adhesions, although this must be undertaken with great care on account of the close proximity of the portal vein and hepatic artery. If it is then found that it can not be exposed recourse may be had to the endocholecystic route; that is to say, after having opened the gall bladder down to the cystic duct, a catheter is gently inserted downward so that it reaches the desired region of the biliary tract. When the hepatic duct has been exposed it should be incised in order to remove any calculi that may be present in cases of lithiasis, after which a drainage tube is introduced. It should be remembered that one is working deep down nearly at the level of the hilum and if the retractors are properly placed, with the liver well raised, one should endeavor to exteriorize the hepatic duct with the fingers. When a good hold can be made on it, its wall should be freely exposed by prudently breaking down all surrounding structures with a director, and, if a calculus is present, the incision should be carried directly over it. When it has been made certain that there is only one calculus and if infection is absent or slight, the incision may be closed on the condition that drainage of the gall bladder is carried out; on the other hand, if the markedly infected aspect of the patient indicates a decided septic condition of the bile, or if there is any fear that other calculi may be present at the point of origin of the branches of the hepatic duct, direct drainage of the latter should be instituted. As this paper particularly refers to these cases, I will briefly describe the manner in which this drainage should be carried out.

A rubber drain proportionate to the caliber of the duct and which may be easily inserted in its lumen is placed in the upper part of the hepatic duct, being inserted to the extent of one or two centimeters and, for security, united with fine catgut to the borders of the incision in the duct, its other end being brought out through the abdominal incision. By this procedure it is almost certain to drain away all the bile, the tube being surrounded by some strips of iodoform gauze to protect the peritoneum against any possible escape of bile, the gauze being removed at the end of 48 hours. A long tube without any perforations should be brought out through the abdominal dressings and placed in a receptacle containing some antiseptic fluid, thus creating a real siphon action, bringing all the bile outside, and by this means a perfectly absolute drainage results. If one chooses, however, the end of the drain may simply be surrounded in the abdominal dressings, which, when saturated, should be changed. No absolute rule as to the time that the drain should be allowed to remain can be formulated, because everything depends on the patient's general condition, the rapidity with which the secondary elimination of calculi takes place, as well as the degree of infection of the bile. It may be said, however, that when the adhesions have become solid, that is to say, at the end of a week, the tube may be removed and the bile allowed to escape through the fistulous tract thus formed. Should the bile be very thick, thus tending to obstruct the lumen of the tube, irrigation through the latter should be resorted to, which dilutes the secreted liquids and may also wash out small calculi which have remained at the upper part of the hepatic duct. Later on, the tube may be removed each time that it needs to be cleansed and when it has been definitely removed the fistula should be irrigated once daily. The final removal of the tube should be done only when the bile has become perfectly transparent and fluid and the patient's general condition has sufficiently improved with complete absence of any rise in temperature.

Considering now the technic of indirect drainage of the hepatic duct, I would say that I will not insist on that made by way of the ductus choledochus, because it merely represents an easy complementary procedure of choledochotomy, an operation which at the present time has become classical and currently undertaken. Drainage of the choledochus and consequently of the hepatic duct may be accomplished by a drain placed in an incision made in the former, but this is not, properly speaking, drainage of the hepatic duct. After having done away with the obstruction to the flow of bile, which is usually a calculus, and being assured that there are no others located higher up, a tube, introduced through the incision in the choledochus, is pushed as far as possible into the hepatic duct, and this is facilitated from the fact that the caliber of the latter duct is greater below than above and, on the other hand, from the fact that it is always dilated when any obstruction of the choledochus exists. The drain which should be pushed, if possible, up to the hilum, is held in place and surrounded with strips of gauze protecting the peritoneum from the exit of bile around the tube. Concerning drainage of the cystic duct and gall bladder, two cases can be considered. I will not refer here to cholecystostomy, pure and simple, which is a very excellent method of drain-

age, but I would say that it can not give rise to a real drainage of the hepatic duct. This drainage is done after having either opened the gall bladder and sutured it to the abdominal wall or after having performed cholecystectomy. In both cases the gall bladder is carefully explored, after which the bile ducts are likewise treated and the proper technic carried out according to circumstances. If the gall bladder and cystic duct are dilated on account of the presence of calculi in the latter, the gall bladder is sutured to the abdominal wall and the drainage tube introduced down to the neighborhood of the hilum by way of the dilated cystic duct and, when properly in place, all bile coming from the liver is carried out just as if the tube had been introduced into the hepatic duct itself.

Although this means of drainage is excellent in many respects, it does not prevent the possible flow of bile toward the choledochus and a continuation of the infection when the bile is particularly septic. In point of fact, it is the spur present at the point of intersection of the cystic and hepatic ducts which is the obstruction to the formation of a perfect drainage of the hepatic duct and it is this obstacle that must be done away with. If the cystic duct is patent, a narrow-bladed knife may be introduced into its lumen, passed along the groove of a director and the spur cut through, after which a tube may be pushed down into the hepatic duct. If the gall bladder and cystic duct are shriveled up and permeable with difficulty, cholecystectomy may be done, and, by using the remains of the cystic duct as a guide, one may slowly incise the structures until the hepatic duct is reached, which is, in its turn, opened, the calculi contained within it removed, and the drainage tube introduced. The latter should be always surrounded by strips of gauze to prevent peritoneal infection from the bile. In all these cases of drainage by the choledochus, or the accessory biliary tracts, after cholecystectomy, or by the way of a dilated cystic duct, the after care is the same as that employed in direct drainage of the hepatic duct, so that it is unnecessary to refer to them.

The various means of drainage that I have so far mentioned may be considered as classical, but I should like to refer in a few words to the more or less exceptional procedure that the surgeon may occasionally be obliged to adopt. It may happen that following an obstruction of the choledochus the hepatic duct becomes greatly distended, forming a true cystic tumor projecting through the hepatic parenchyma similar to a hydatid cyst, or in the midst of adhesions which partially conceal it, may simulate a distended gall bladder under the lower border of the liver. Such diagnostic errors occur and are excusable and they are very interesting to study, because, when known, error in treatment may be avoided and the surgeon will at once directly attack the hepatic duct or at least incise the choledochus in order to remove the obstruction and indirectly drain the hepatic duct by this route. Hepaticostomy may be accomplished by two ways, viz.: the transhepatic and the infrahepatic route. In both cases, as the name indicates, the duct is opened and stitched to the cutaneous incision. The first instance of transhepatic hepaticostomy was done in 1888 by Thornton. The case was an enormous dilatation of the hepatic duct by bile and numerous calculi, so that it formed a pocket, causing the anterior aspect of the liver to project forward and communicated with the choledochus. Similar other cases have been met with by Mayo-Robson and others. The difficulty of an exact diagnosis of such lesions is evident, both from the standpoint of its nature as well as site, because very frequently only a slight projection on the surface of the liver is noticed, or even a mere change in color is the only indication. In the first place, the exact point of hepatic parenchyma to be incised should be thoroughly mapped out in order to have all necessary facility for treating the contents of the cyst formed by the distended hepatic duct. The most important point is the condition of the choledochus and the surgeon should give particular attention to this because the technic followed will entirely depend on the patency of this duct, and consequently before making an incision into the liver the biliary tract should be carefully explored.

If one is certain that the duct is patent, after having removed the cause of obstruction, and that the flow of bile is normally accomplished, hepaticostomy may then be undertaken, the liver having been in the first place sutured to the parietal peritoneum. On the other hand, if the duct is not patent, the opening made in the hepatic duct should be sutured to the abdominal incision. With whichever case one is dealing, when the pocket has been incised and fixed to the incision, a careful exploration should be made particularly on the terminal end of the hepatic duct and the origin of the choledochus, at which point the obstruction must necessarily be found, and the exploration should be continued until there is absolute certainty that the obstruction has been removed. If, by chance, the dilatation arises in one of the primary branches of the hepatic duct, there is really no change in technic. A large drainage tube should be inserted in the pocket, and the after-care, consisting of irrigation of the pocket, should be carried out as in any similar operation.

Infrahepaticostomy dates back to 1899, but the first operation was not successful. The hepatic duct was greatly dilated, forming an enormous intrahepatic cyst. At autopsy it was found that the distension involved the choledochus and hepatic duct, but the cause remained undiscovered. These two exceptional technics have certainly very distinct indications in some cases, but as yet instances where these have been done are far too few for one to make any conclusion relative to their value.

Drainage of the hepatic duct has for its end to temporarily give exit to bile directly from the principal biliary passages, especially when there is an infection of the organism resulting from some infectious process of the liver. Such drainage is absolute, because it is established in the hepatic duct at its exit from the liver, and, if it is well carried out, the bile can neither reach the duodenum nor the gall bladder. Now, since all the bile is drained away, the drainage should only be temporary, because the organism can not be continually deprived of the bile, or, more properly speaking, the small intestine is not able to get along without such a necessary organic fluid for the digestion. Although temporary, it is a precious surgical resource to thus be able to remove from the body the poisons secreted by the hepatic cell and which otherwise would be carried to the intestine by the choledochus and thus continue to poison the organism. Like all new methods, this one has been the object of numerous objections, such as suppression of the biliary function, diminution of the caliber of the hepatic duct and irritation of the walls of the duct as well as the possibility of hemorrhage. It is evident that the total elimination of the bile exteriorly is a very important consideration, but when the organism is thoroughly infected from a septic bile it is much better to temporarily deviate its course than to run the risk of

general infection of the subject. As to the decrease in the caliber of the hepatic duct there is nothing easier than to remove the drain in order to irrigate. Consequently such an objection is really of little value. There is, however, one of far greater import, viz., whether the lumen of the hepatic duct is always sufficiently large to allow of the introduction of the drainage tube. It has, however, been amply shown by Delageniere that each time an obstruction is seated in the choledochus resulting in biliary retention with an increase in the size of the liver the hepatic duct is always found dilated and consequently presents the best possible condition for drainage. When the choledochus is obstructed by calculi it is practically certain that the gall bladder will be found atrophied and the hepatic duct dilated. It is not, however, only lithiasis that produces this dilatation, because every time that some cause, such as a mechanical obstruction or infection results in biliary retention with increase in size of the liver, the hepatic duct will be found dilated, and this very dilatation is, so to speak, an indication to establish total drainage. If the gall bladder and cystic duct are used to obtain drainage by simply performing cholecystostomy, it is never certain that the cystic duct is patent, as even in the normal state it is not regular in caliber and when pathologically affected is more apt to be reduced in size, deformed and more or less obliterated. On the other hand, choledochotomy with the introduction of a drain in contact with the incision of the duct and packing with gauze is of necessity insufficient and does not prevent quite an amount of septic bile reaching the terminal portion of the choledochus and entering the duodenum, thus keeping up the sepsis. This, however, does not necessarily mean that total drainage should be systematically employed, because in medicine, as in surgery, there should be no fixed rules and everything should be subordinated to circumstances, for each case requires a particular treatment.

Before considering the general indications for total drainage of the hepatic duct it should be mentioned that, according to the observation of most operators, obstruction from calculi in the primary branches of the hepatic duct and which have been impossible to extract are thus given an easy exit, but it is more especially a marked infection of the liver, whether it originates from calculi or some other cause, that total drainage is indicated, because by this means alone all the bile is removed.

Without referring to the exceptional technics it may be said that one may drain by way of the accessory biliary tracts, by the choledochus or the hepatic duct itself, and we would now consider the indications and contraindications of each of these procedures. We will first consider indirect drainage of the hepatic duct by way of the gall bladder and cystic duct. Cholecystostomy can not be properly considered as true drainage of the hepatic duct, because, unless there is an absolute occlusion of the choledochus, nothing prevents the bile from reaching the intestine. The introduction of a drainage tube through a dilated cystic duct and carried deeply down is certainly a step forward, but this method, although assuring an almost absolute derivation of the bile outward, is subject to the same objection already mentioned. It is consequently to drainage by a tube reaching down to the hepatic duct that we should consider, and its indications are practically as follows: A serious non-calculous infection is a certain indication, but it is cholecystitis that especially requires this treatment, because the presence of calculi in the gall bladder and cystic duct requires direct surgical treatment of these organs, and this is what has always been done until recently when one has introduced a tube down to the hepatic duct by way of the accessory biliary tracts after having performed the ordinary operations, such as cholecystostomy, cholecystectomy, and so forth. Serious infection of the liver and biliary artery have rendered necessary this supplement to the surgery of the gall bladder, in spite of its difficulties, because all the bile coming from the liver should be drained away by an introduction of the tube into the hepatic duct itself, and, since the gall bladder has been opened, one should profit by the cystic duct to insert a drain down to the hepatic, and, according to circumstances, the dilated cystic duct can be used for the introduction of the tube after incision of the spur already alluded to, or the remains of the cystic duct may be used as a guide to reach the hepatic duct, incise it and introduce drain. Here the indications are made evident by the pathologic lesions more than by the clinical history of the case. Total drainage may be either temporary or permanent, according to whether one is dealing with a serious infection with patency of the choledochus or with an occlusion of this duct which can not be removed, or when an interference with the deeper tracts is incompatible with the general condition of the patient or contraindicated by the existing lesions.

As to drainage by way of the choledochus, it may be said that in reality this is merely a direct drainage of the hepatic duct. Formerly a drainage tube was simply placed in contact with the incision made in the choledochus, or inserted within its lumen, but at the present time the tube is pushed down to the origin of the hepatic duct, when the following conditions are present: The principal indication is the presence of a calculus at the origin of the choledochus, whose presence has set up a serious infection of the liver, but, when once the calculus has been removed, the duct is found free on account of the dilatation which has taken place in the hepatic duct and all that is necessary is to introduce the drainage tube, pushing it up to the hilum of the liver. Beside infection, which is the principal indication for drainage, the presence of suspected calculi at the origin of the hepatic duct should also be called to mind. Direct drainage of the hepatic duct is of more recent date, its indications being serious infection and the suspected presence of calculi in the region of the hilum of the liver. These indications are the same as those for drainage of the choledochus and consequently it is only done after removal of the calculi lodged in the hepatic duct. I have referred to the objections which have been made to this method, but I may add that it is not an obligatory supplement to hepaticostotomy, because, if no serious infection is present, if the patency of the hepatic duct at the hilum is certain, if, on the other hand, it is impossible to re-establish the course of the bile either by way of the choledochus or the gall bladder, hepaticoenterostomy may be resorted to.

**Cancer and Climate.**—The *Med. Klinik* for February 24 quotes from a recent publication of the Amsterdam board of health giving the statistics of cancer in various cities and climates. The figures show that climate seems to have no influence on the prevalence of cancer. The report states that during 1905 Copenhagen recorded 154 deaths from cancer to 100,000 inhabitants; Florence, 146; Chicago, 59; Nice and Turin, 72 and 74; Tokio, 57; Naples, 54; Stuttgart, 136; Zurich, 139; Lyons, 171; Cracow, 209; Berlin, 115; Paris, 114; London, 100, and Dresden, 105.

# SOME WELL-KNOWN SYNTHETIC CHEMICALS AND THEIR RELATION TO THE PURE FOOD AND DRUGS ACT.*

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The word "synthetic," as used in the chemical world, means a combination of separate substances, elements or radicals, which result in the formation of definite chemicals. The manufacture of acetanilid from benzol, or antipyrin from anilin, affords good illustrations, inasmuch as in the manufacture of both several operations are necessary. The word "synthetic," however, has acquired an entirely different meaning, which has been used to a considerable extent in the past, usually in an honorable manner, but often for the purpose of deceiving not only the public, but physicians as well. This feature has been claiming recognition in no unmistakable terms during the past few months. It is held by some that the mixing together of the various cinchona alkaloidal salts, in proportion as found by analysis of the cinchona barks, the same dissolved in simple elixir and colored with caramel, is a "synthetic elixir of cinchona bark." Other illustrations are the common headache mixtures, which consisted in the past, and at present to a lesser extent, chiefly of acetanilid, sodium bicarbonate or ammonium carbonate and caffein. These mixtures are at times so named as to lead to the belief that they are synthetic chemicals. In some cases a hypothetical chemical name, together with a structural formula, is attached to make the deception even more complete. Since the passage of the act the acetanilid has been replaced in many instances by para-acetphenetidin (commonly known as phenacetin) and antipyrin. This subject will be considered in a subsequent portion of this paper. It is also claimed that a so-called raspberry extract, made by dissolving various esters in alcohol (grain or wood) and coloring the solution with cudbear, is a "synthetic raspberry extract." There are undoubtedly different views as to whether or not the latter claims are justifiable, but in my opinion the first definition, or a similar one, is the only one that should receive any recognition in the chemical world. As a matter of fact, the latter is simply used to attract the attention of the public and has no basis for existence whatever.

The Food and Drugs Act specifies that an article is misbranded if it fails to bear a statement on the label of the package "of the quantity or proportion of any alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabias indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein." The act also forbids the use of any poisons or deleterious ingredients in the manufacture of food products, or of any agent which misleads or deceives in any particular. The two phases of the act just considered require, first, that the presence of certain habit-forming drugs shall be declared on the label, and, second, that no injurious agent or agents which deceive in any particular shall be used in the manufacture of food products.

It can readily be seen by chemists familiar with the ingredients enumerated in the act that the phrase "derivative and preparation of same" is very comprehensive, which was undoubtedly the intention of Congress. This clause was undoubtedly introduced for the purpose of preventing or evading prosecutions under the law on pure technicalities. For example, it has been held by the defendant in a number of cases in which a prosecution was brought, on the ground that a product contained the forbidden ingredient morphin, that the ingredient in the product under consideration was not morphin but morphin sulphate. The same position has been taken in other cases; for example, it is contended by some manufacturers that a preparation in which cocain is introduced through the medium of an extract of coca leaves, or by extracting coca leaves directly with the menstruum of the article, can not be considered a cocain preparation any more than could coffee be construed as a caffein product. It is immaterial how cocain is introduced into a product; the fact of its presence renders such a product a cocain preparation. Any other conclusion must be based on a technicality or is a mere quibble.

So far as the word "preparation" is concerned, as used in the act, there does not appear to be any question relative to its meaning, but this is not the case with the word "derivative." The term "derived from," as used in the tariff law of 1897, has not only been subject to decisions at the hands of the appraiser of the United States Customs Service, but has also been defined by the United States Federal Court (1899 Federal Reporter 719) and the United States Court of Appeals (102 Federal Reporter 603). The decisions arrived at are that the words "derive," "derivation," "derivative," must be interpreted as "made of," "prepared from," "produced from," "obtained from," and that the term "derived from" has its ordinary meaning of "produced from" and relates to the physical substance from which such product is obtained and not *to its chemical relationship.* In other words, if the manufacturer starts with alizarin and by partial replacement produces a dye, such dye is derived from alizarin, but not otherwise. The question under consideration in the above decisions was whether or not certain dyes were derived from alizarin. These precedents must undoubtedly be taken into consideration in connection with the recently-enacted pure food and drugs law, but the aims and objects of the latter are entirely different from those of the tariff law.

The meaning of the term "derivative," as used in the act, has been called into question because (para) acetphenetidin is classed as a derivative of acetanilid. There is no question but that (para) acetphenetidin is a derivative of acetanilid, both chemically and physiologically and resembles it in its tendency to habit formation, physiologic action and physical properties. Furthermore, treasury decision 13270 construes this chemical as an alcoholic medicinal preparation. The exact status of this product under the law appears, therefore, to be in a somewhat unsettled condition at present.

In this paper only a few of the synthetic chemicals that are affected by the Federal Law will be considered. For the purpose of ready reference it is deemed desirable to collect them into the following groups:

ALCOHOL GROUP.

| Common names. | Synonyms and Chemical Names. |
|---|---|
| Ether | Sulphuric ether, ethyl ether. |
| Ethyl acetate | Acetic ether. |
| Ethyl nitrite | |
| Ethyl bromid | Monobromethane. |

CHLOROFORM AND CHLORAL HYDRATE GROUP.

| | |
|---|---|
| Chloroform | Trichloromethane. |
| Chloral hydrate | Trichlorethidene glycol. |
| Chlorotone | Aneson; Acetone chloroform; Trichlor-pseudobutylalcohol. |
| Chloral alcoholate | Trichlorethidene ethyl alcoholate. |

* Lecture delivered before the Chemical Section of the Franklin Institute, Jan. 10, 1907.

COCAIN GROUP.

| | |
|---|---|
| Alpha-eucain | Benzoyl, methyl-tetra-methyl-gamma-oxy. piperidin-carboxylic-methyl ester. |
| Beta-eucain | Benzoyl-vinyl-diacetonalkamin hydrochlorid. |

OPIUM-MORPHIN GROUP.

| | |
|---|---|
| Heroin | Diacetyl morphin. |
| Dionin | Ethyl morphin hydrochlorid. |
| Peronin | Benzyl morphin hydrochlorid. |
| Codein | Methyl morphin. |

ACETANILID GROUP.

| | |
|---|---|
| Acetanilid | Phenylacetamid; antifebrin. |
| Phenacetin | Para-acet-phenetidin; Acetphenetidin; Para-acet-amido-phenetol; Para-ovyethyl-acetanilid. |
| Antipyrin | Analgesin; Anodynin; Parodyn; Phenazon; Phenyl-dimethyl-pyrazolon; Pyrazin. |

PRESERVATIVE, SWEETENING AND FLAVORING GROUP.

| | |
|---|---|
| Salicylic acid | Ortho-oxy-benzoic acid. |
| Benzoic acid | |
| Vanillin | Methyl-protocatechuic aldehyd. |
| Saccharin | Benzosulphinid. |

In these groups it will be noticed that not only are the common names employed, but also the synonyms and structural formula names. The object of giving the latter is simply to call attention to the fact that manufacturers are making frequent requests to be permitted to use some other words than those specifically enumerated in the act; for example, one manufacturer represents that a setting forth on the label of the fact that his product contains opium would be a financial loss, and asks whether it would not be satisfactory to state on the label that this product contains a certain amount of papaver somniferum. Other manufacturers request that they be permitted to use the word phenylacetamid or the phrase "the monacetyl derivative of anilin" or the structural formula in place of the word acetanilid. If it were permitted to use other words than those given in the act for the ingredients specifically covered there would soon be such a confusion of names and structural formula that it would be necessary to consult an expert organic chemist to decipher them.

It is held by some writers that it was absolutely unwarranted to include some of the chemicals and products enumerated in the rules and regulations, because in many cases such articles are never used as habit-producing drugs. In this connection it should be stated that this question was submitted to about twelve of the best pharmaceutical chemists, manufacturing and analytical, and while a few think that the public would be protected just as well without requiring a declaration on the label of the presence of certain drugs, yet on the whole every one heard from thus far suggested that additional products be included. In other words, the suggestions of these men indicate that instead of having included too many drugs, the list should be augmented. Our general correspondence confirms this attitude. It should, furthermore, be noted that it seems necessary to include certain chemicals in order to avoid technicalities; for example, it is held by one chemist that a certain chemical could not be considered a derivative of alcohol because ethyl bromid is not enumerated as a derivative of alcohol in the regulations, and inasmuch as this chemical is employed directly in introducing the ethyl group into the product, it is necessary that this product be included as a derivative of alcohol. The contention that certain ingredients are not used as habit-producing drugs is not well taken. This claim is made for ether, which, as a matter of fact, however, is used to fortify beverages in order to render intoxication more rapid and complete; particularly is this the case with individuals addicted to the alcohol habit and whom the ordinary beverage does not appear to satisfy.

The morphin group presents some interesting features. It is well known that morphin and opium and the disastrous results of their use have been widely exploited during the past few years, not only in the lay journals, but also to some extent in the public press. Many manufacturers deem it expedient to remove these words from their labels if possible because of this unfavorable notoriety. The result is that in many instances these ingredients have been replaced with other products which are not so well known to the public; for example, heroin, codein and dionin have replaced morphin in a considerable number of cases. These chemicals are at present supposed not to produce such deleterious results on the human system as do opium and morphin, even when used over extended periods, but it is difficult at present even to conjecture what their promiscuous and indiscriminate use will bring forth in the future. It is even now reported that where narcotic laws prohibit the indiscriminate sale of morphin and no restrictions whatever are placed on the sale of codein the latter product is being used in place of the former.

What has been said in connection with the opium-morphin group applies equally to the acetanilid group. At the time the Food and Drugs Act was passed there were approximately 500 headache and laxative preparations which contained acetanilid sold through the jobbing trade under various names. It is a significant fact that the acetanilid in many of these preparations has been replaced by acetphenetidin (phenacetin), and we are also informed from various sections of the country that antipyrin is being employed for the same purpose. Exactly why some of these changes have been made is not clearly apparent, because none of the substitutes are as cheap as acetanilid, although the price of each has been materially reduced within the past few years. This is due largely to the fact that the patents covering these chemicals have lapsed, and the price has fallen in the case of acetphenetidin (phenacetin) from $16.00 to $1.00 a pound, and in the case of antipyrin from about $22.00 to $2.40 a pound, both in bulk. The price of acetanilid in quantity at this writing is 25 cents a pound. Another probable reason for replacing acetanilid is because acetphenetidin is supposed to have a less deleterious effect on the human system than the former, but at present this is an open question. No one has thus far ventured to give this as an excuse for using antipyrin, because it is a well-known fact that the latter is the most dangerous of these three medicinal agents. Two other potent factors, however, should be considered in this connection. These are: First, the deleterious effects of neither acetphenetidin nor antipyrin have been given any publicity, and the public, therefore, has little knowledge of the meaning of the words acetphenetidin and antipyrin should their presence be declared on the label; second, it was expected that both of these chemicals could be used indiscriminately in medicines without the necessity of declaring their presence on the label. Acetphenetidin, however, according to the rules and regulations made under the Food and Drugs Act, must be set forth on the label.

The use of harmful preservatives in food products is forbidden. The exact status of the harmful nature of certain preservatives is not definitely settled at present. Among the most conspicuous preservatives used during recent years are the synthetic chemicals known as salicylic acid and benzoic acid and their salts. The experimental results obtained in the Bureau of Chemistry in connection with salicylic acid and salicylates have just been published in Bulletin 84, part 2, from which part of the general conclusions are herewith quoted:

There has been a general consensus of opinion among scientific men, including the medical profession, that salicylic acid and its compounds are very harmful substances, and the prejudice against this particular form of preservative is perhaps greater than against any other material used for preserving foods. This is due not only to the belief in the injurious character of salicylic acid, but perhaps is especially due to the fact that it has in the past been so generally used as an antiseptic. That salicylic acid should be singled out especially for condemnation among preservatives does not seem to be justified by the data which are presented and discussed in this bulletin. That it is a harmful substance, however, seems to be well established by the data taken as a whole, but it appears to be a harmful substance of less virulence than has been generally supposed. The addition of salicylic acid and salicylates to foods is, therefore, a process which is reprehensible in every respect, and leads to injury to the consumer, which, though in many cases not easily measured, must finally be productive of great harm.

Benzoic acid and the benzoates are by many considered less harmful than the salicylates. Whether or not this is correct remains to be established by future experiments and observations. This much, however, is certain, that whenever it is possible, and usually it is, food products should be prepared without the use of any questionable preservative.

Saccharin is generally employed as a sweetening agent and its use is largely of a deceptive character because the consumer usually believes when he is eating a food product sweetened with this chemical that the sweetening is due to some form of sugar. The use of saccharin as a sweetening agent is not only common in food products, but also in medical remedies. Saccharin is a most valuable agent in certain diseased conditions, but this does not justify its indiscriminate use. Inasmuch as deceptions and misrepresentations of all kinds are prohibited under the act, the presence of this chemical should be declared on the label.

The synthetic production of vanillin undoubtedly was one of the greatest scientific achievements and triumphs of chemistry. Vanillin is a very valuable commodity. It is claimed by many that flavoring preparations made with vanillin as a basis possess distinct advantages over extracts made from the vanilla bean. There is no question whatever but that vanillin possesses certain merits not inherent in the vanilla bean, and it seems rather incomprehensible why manufacturers do not take advantage of this fact and sell vanillin preparations on their merits. Let not vanillin in disguise deprive extract of vanilla of its time-honored reputation.

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## TINCTURE OF STROPHANTHUS.

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Strophanthus has not rivaled digitalis in the extent of its use, except, perhaps, for a short time after the former was brought into prominence by Fraser. This is somewhat remarkable in view of the fact that numerous investigators have found that the action of strophanthus presents certain advantages over that of digitalis; thus, strophanthus, and to a greater extent its active principle, strophanthin, act much more promptly than digitalis or digitoxin. Fraenkel found that the action of a single effective dose of digitoxin was delayed for many hours beyond that of a corresponding dose of strophanthin, and while he was unable to induce slowing of the cat's heart from a single non-toxic dose of digitoxin, a single non-toxic dose of strophanthin promptly proved effective. Strophanthus produces much less vasoconstriction in the splanchnic area than digitoxin does, and while this is a disadvantage in shock, it is often desirable in producing diuresis, since the constriction of the vessels in the kidney by digitoxin may seriously interfere with the diuretic action.

Gottlieb and Magnus, working with the isolated cat's heart, found that strophanthus caused practically no constriction of the coronary vessels, in contrast with the action of digitoxin, with which the constriction was found to be so marked at times as to completely mask the other actions on the heart. This must be of considerable importance when hypertrophy of the heart is the object sought, since these investigators have found that the actions of the two drugs on the heart are otherwise practically alike. According to Fraenkel, cumulative effects are not nearly so readily induced with strophanthin as with digitoxin.

Strophanthin further possesses the following advantages over digitoxin: It is much more soluble in water; it is not irritant, and, therefore may be injected hypodermically; it is much more active and not nearly so expensive as digitoxin.

R. Heinz states that the therapeutic effects of strophanthus are the same as those of digitalis, while strophanthus exhibits much less of the disagreeable side effects.

With these evidences of its advantages it is well to inquire why strophanthus has not come into more general use, at least in suitable cases, for I am not prepared to say that it should be used to the exclusion of the better-known drug.

Heinz states that strophanthus fell into disfavor in Germany soon after its introduction owing to the fact that a number of species of widely varying activity were employed. Some samples of the tincture were found to be but one-sixtieth as active as others. Under the circumstances it was inevitable that the drug should fall into disrepute. While I am not aware that any comparative tests were made of the strength of tinctures found in commerce in this country about the time of the introduction of the drug it is extremely probable that variability existed here to the same extent as that observed in Germany, and naturally with the same inevitable result.

Of late years strophanthus has been used with satisfactory results in Holland, Belgium and France, and that alone proves that a fair degree of uniformity in the preparation now obtains in those countries. In order to determine whether a similar degree of uniformity now prevails here, a number of samples of tincture of strophanthus were bought from as many drug stores on the east side in New York City and compared with tinctures carefully prepared by myself from the best obtainable seed, as well as with specimens prepared from samples of seed which had been on hand for different periods of time.

Owing to the extreme difficulty in making chemic tests of these preparations the physiologic test recently advocated by Fraenkel was employed. This consists in determining the amount necessary to produce systolic standstill of the ventricle per 100 grams of frog in one hour. Tests made on cats were found to be equally accurate and more conveniently carried out than those on frogs, and those animals were used for a number of

experiments. The degree of potency is usually shown rather strikingly in mammals by the rapidity of onset and the intensity of vomiting, as well as by the depression seen after varying doses. That this is an index of the therapeutic activity is proved by the fact that pure strophanthin, which has been much used in pharmacologic investigations, presents no preceptible difference in its action.

While the bare figures given in the tables do not convey nearly so accurate an idea of the relative degree of potency of the several samples as one gets by actual observation of the experiment, they afford sufficient proof that we are not dealing with any great variation in strength.

In this connection it should be borne in mind that the tincture of strophanthus, U. S. P., VIII, is of 10 per cent. strength, whereas that of the previous edition was but half as strong, and the physician should assure himself that the patient gets the stronger preparation.

For the purpose of the experiment the several tinctures were diluted so that one c.c. of the dilution represented one milligram of the seed; this was injected into the ventral lymph space in frogs and hypodermically in mammals. While exactly uniform results were not obtained, as might be expected, the experiments showed a fair degree of uniformity not only in the various specimens bought in the open market and those freshly prepared, but a tincture made from seed which had been in this laboratory for at least sixteen years was found to be as potent as the standard. One specimen of tincture bought from a drug store on the west side and kept in this laboratory for eighteen months showed the same degree of potency as the freshly-made preparations.

The various samples of tincture were obtained as follows:

No. I. Made in this laboratory from powdered seed obtained from Gilpin, Langdon & Co., in the spring of 1905.
No. III. Made in this laboratory from seed which had been in the laboratory for more than sixteen years.
No. IV. Made in this laboratory from seed obtained from Gilpin, Langdon & Co., in September, 1906.
No. VI. Bought at retail, labeled "Squibb's."
No. VII. Bought at retail, labeled "Parke, Davis & Co.," U. S. P., 1890.
No. VIII. Bought at retail, said to have been made from Gilpin, Langdon & Co.'s ground drug.
No. IX. Bought at retail, labeled "Sharpe & Dohme." Age unknown.
No. X. Made in this laboratory from Gilpin, Langdon & Co.'s ground drug. Obtained in September, 1906.
No. XI. Bought at retail, labeled "Parke, Davis & Co.," U. S. P. 1890.
No. XII. Bought at retail labeled "Squibb's."
Nos. 11 and 5 were not used in this series of experiments.

TABLE 1.—EXPERIMENTS ON FROGS.

| Specimen No. | Dose—Equivalent of 10 per cent. tincture per 100 gms. frog. | Result in One Hour. |
|---|---|---|
| I. | 0.006 c.c. | Ventricular standstill (in 2 out of 3). |
| III. | 0.004 c.c. | Ventricular standstill. |
| IV.* | 0.006 c.c. | Ventricular standstill. |
| VII. | 0.006 c.c. | Inconclusive (only three experiments). |
| VII. | 0.01 c.c. | Ventricular systolic standstill (invariably). |
| IX. | 0.006 c.c. | Ventricular systolic standstill about one-half the experiments. |

* This amount was found to be the minimum quantity of this specimen required in a large number of experiments to produce ventricular systolic standstill fairly regularly, then the same amount of other specimens was used for comparison.

To facilitate comparison of toxicity Table 3 is compiled from Table 2 without taking into account cumulative action, which is not very important at this time, except with Specimen VI.

The first five preliminary tests on cats were made to determine whether any degree of uniformity of action might be expected. The results show a much closer agreement than had been anticipated, but it was seen that with such massive doses, killing so quickly, the interval before death would be more dependent on accidents of absorption than would be the case when some hours must elapse.

As vomiting is such a common symptom, not only

TABLE 2.—EXPERIMENTS ON CATS AND DOGS.*

| Date. | Animal No. | Specimen No. | Dose—equivalent of 10 per cent. tincture in c.c. per Kg. | Result. |
|---|---|---|---|---|
| | | CATS. | | |
| ..... | 1 | X. | 0.17 | Emesis in 20 min.; death in 43 min. |
| ..... | 2 | VI. | 0.17 | Emesis in 15 min.; death in 29 min. |
| ..... | 3 | VIII. | 0.17 | Emesis in 18 min.; death in 60 min. |
| ..... | 4 | VII. | 0.17 | Emesis in 15 min.; death in 44 min. |
| ..... | 5 | IV. | 0.1 | Emesis in 17 min.; death in 86 min. |
| Dec. 19..... | 7 | I. | 0.0125 | Emesis in 68 min.; many times repeated. |
| Jan. 23..... | 7 | I. | 0.01 | Emesis in 2½ hours, but once. |
| Jan. 24..... | 7 | I. | 0.0075 | Emesis in 10 min.; many times repeated. |
| Jan. 28..... | 7 | XI. | 0.0125 | Emesis in 47 min.; many times. |
| Dec. 19..... | 7a | I. | 0.0125 | No effect. |
| Dec. 21..... | 7a | I. | 0.025 | Emesis in 31 min.; many times. |
| Dec. 22..... | 7a | I. | 0.05 | Emesis in 7 min.; death in 36 min. |
| Jan. 25..... | 9 | VI. | 0.0125 | Emesis in 2 hours. |
| Jan. 28..... | 9 | VIII. | 0.0125 | Emesis in 1 hour, 50 min. |
| Feb. 1..... | 9 | VIII. | 0.04 | Emesis in 33 min.; death in 2 hours. |
| Jan. 28..... | 10 | III. | 0.0125 | No effect. |
| Jan. 30..... | 10 | III. | 0.0125 | No effect. |
| Feb. 1..... | 10 | VI. | 0.017 | Emesis in 56 min. |
| Feb. 2..... | 10 | III. | 0.017 | Emesis in 21 min. (slight cumulative action). |
| ..... | 10 | III. | 0.023 | |
| Total in half hour.. | | | 0.04 | Death in 4 hours. |
| Jan. 28..... | 11 | VII. | 0.0125 | No effect. |
| Jan. 30..... | 11 | VII. | 0.0125 | No effect. |
| Jan. 31..... | 11 | VII. | 0.017 | No effect. |
| Feb. 2..... | 11 | VII. | 0.017 | Emesis in 53 min. |
| ..... | 11 | VII. | 0.023 | |
| Total in one hour... | | | 0.04 | Emesis with great depression, nearly fatal. |
| Feb. 4..... | 11 | VII. | 0.04 | Death in 83 min. (some cumulative action). |
| Jan. 30..... | 12 | IX. | 0.125 | No effect. |
| Jan. 31..... | 12 | IX. | 0.017 | No effect. |
| Feb. 1..... | 12 | XI. | 0.017 | Emesis in 54 min.; but once. |
| Feb. 2..... | 12 | IX. | 0.017 | Emesis in 12 min. |
| ..... | 12 | IX. | 0.023 | |
| Total in half hour.. | | | 0.04 | Emesis frequently repeated; nearly fatal. |
| Feb. 4..... | 12 | IX. | 0.04 | Emesis in 8 min.; death in 68 min. |
| Jan. 30..... | 13 | III. | 0.04 | Emesis in 37 min.; great depression next day. |
| Jan. 31..... | 13 | III. | 0.04 | Emesis in 17 min.; death in 60 min. |
| Feb. 8..... | 14 | VI. | 0.04 | No effect. |
| Feb. 9..... | 14 | VI. | 0.04 | No emesis; death in 44 min. |
| Feb. 8..... | 15 | VII. | 0.04 | Emesis in 74 min.; death in about 36 hours. |
| Feb. 8..... | 16 | XI. | 0.04 | Emesis in 29 min.; death in 3 hours, 15 min. |
| Feb. 11..... | 17 | XII. | 0.04 | Emesis in 18 min.; death in 62 min. |
| | | DOGS. | | |
| ..... | 1 | I. | 0.04 | Emesis many times repeated; nearly fatal. |
| ..... | 2 | IX. | 0.04 | Emesis in 70 min.; death in 3 hours, 5 min. |

* While the rapidity of action in animals 1 to 5 affords a means of fairly accurate comparison, it was thought preferable to employ amounts just sufficient to produce vomiting and others about the minimum fatal dose.

after the tincture of strophanthus, but also after pure strophanthin, it was thought that this symptom might be used as an index of potency. While this is true to a certain extent, the resistance to the action on the vomiting center is more variable than it is to the action on the heart, and it was, therefore, considered better to determine the amount necessary to produce systolic standstills, which is, of course, promptly followed by death, unlike the case in frogs in which there may be no visible outward symptoms for some hours after the heart ceases to beat.

TABLE 3.

| Specimen. | Dose. | Animal. | Result |
|---|---|---|---|
| I. | 0.04 | Dog. | Emesis and great depression; almost fatal. |
| III. | 0.04 | Cat. | Death in 4 hours. |
| VI. | 0.04 | Cat. | No effect (tolerance). |
| VI. | 0.04 | Cat. | Death in 44 min. (total in 24 hours of 0.08). |
| VII. | 0.04 | Cat. | Death in about 36 hours. |
| VII. | 0.04 | Cat. | Emesis with great depression. |
| VII. | 0.04 | Cat. | Death in 83 min. (second dose in 48 hours). |
| VIII. | 0.04 | Cat. | Death in 2 hours. |
| IX. | 0.04 | Cat. | Great depression (0.017 given 24 hours previously). |
| IX. | 0.04 | Cat. | Death in 68 min. (dose given 48 hours after preceding). |
| IX. | 0.04 | Dog. | Death in 3 hours, 5 min. |
| XI. | 0.04 | Cat. | Death in 3 hours 15 min. |
| XII. | 0.04 | Cat. | Death in 62 min. |

One-eightieth of a c.c. per Kg. of the 10 per cent. tincture was the smallest initial dose which was found to produce vomiting, though less than a hundred and twenty-fifth of a c.c. was effective twenty-four hours after a somewhat larger dose. On the other hand, cat 14 did not vomit after ten times this amount given in the course of two days, though death resulted speedily after the second dose.

I wish to reiterate that the object of these experiments was not to show any exact uniformity in the action tincture of strophanthus from various sources, for this is manifestly impossible, but to prove that we have a vastly more uniform product than in the case of the preparation of digitalis.

It may be remarked, wholly parenthetically, that these results do not confirm the charges which it has become the fashion to make in regard to the unreliability of the pharmacists of New York. The various specimens were not obtained from the better class of stores but in most cases from those in the poorer quarters.

In conclusion it may be stated positively that there is no difficulty in obtaining tincture of strophanthus in the open market of quite as nearly uniform potency as obtains in the case of tinctures of other drugs which are not standardized, and that the seeds do not undergo deterioration on being kept for several years, possessing in this respect a great advantage over digitalis leaves, which deteriorate rapidly despite care on the part of the pharmacist. Digitalis continues to be of very variable strength, not only for the reason just stated, but owing to want of uniformity in the time of collection, methods of drying and source even when the official requirements are met. It should be remembered also that the strength of the infusion of digitalis varies greatly with the manner of preparing it, an infusion made from the powdered leaf much more nearly representing the full potency than one made from the leaf which has been merely broken up in the mortar, as is frequently the case.

**The Duty of the Hospital.**—The medical institution is under obligation to administer its charity wisely, to aid in medical education, and to protect its staff from imposition.—E. B. Young, M.D., in the *Bull. of Am. Acad. of Med.*

## *Clinical Notes*

### AN ASEPTIC PUMP FOR TRANSFERRING MEASURED QUANTITIES OF STERILE FLUIDS.

PRELIMINARY COMMUNICATION.

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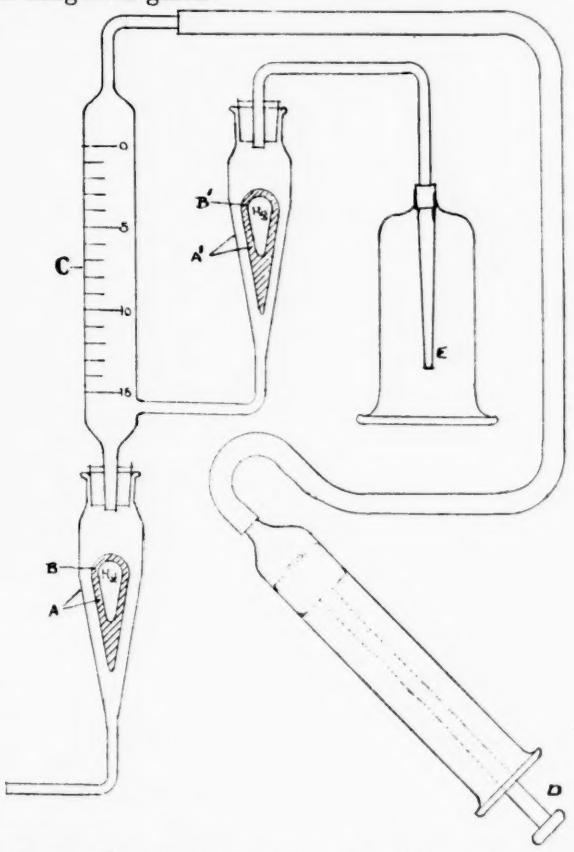
Almost all the devices in use at the present time for filling tubes or bottles with definite quantities of fluid depend for the *vis a tergo* on the gravity of the fluid column. When wishing to depart from this simple method, as is sometimes desirable or necessary, one is confronted with several difficulties. To overcome these, rather expensive and complicated appliances are necessary, the manipulation of which requires considerable time. The pump I have devised was suggested by the respirator sometimes used by chemists when working with dangerous gases.




Aseptic pump for transferring measured quantities of sterile fluids.

The apparatus consists of two glass valves, a graduated burette, and a piston syringe. Each valve, A A′, consists of a capsule into which is fitted a very carefully ground stopper, B B′. These stoppers are weighted with mercury so that they will sink into place quickly and accurately. These valves are connected with the graduated burette as shown in the diagram. When traction is made on the piston D, the valve B is lifted and the fluid passes into the burette C. When the suction ceases the valve settles and prevents the least regurgitation. The piston D is now pushed into the syringe; pressure in this direction closes the valve B more tightly and opens the valve B′ which allows the fluid to pass out at the shielded delivery tube, E.

The pump is easily sterilized by allowing an antiseptic to stand in it for the proper length of time. This antiseptic may be washed out with either sterile water or salt solution. By the use of a spring or weight and stop one may easily arrange so that the burette will be filled automatically.

# SARCOMA OF THE TESTICLE.

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Tumors of the testicle are fairly often seen in genito-urinary practice, but their diagnosis is not always a simple matter. Especially is this true of malignant growths, because of their close clinical resemblance to tuberculous and syphilitic deposits. Hence the interest in the unusual case herein reported.

When a man presents himself with an abnormally large testicle or a large mass in the scrotum, we have to think of numerous conditions that might be causative factors, and as a matter of clinical interest I have enumerated the following formidable list of possible conditions that must be thought of: Tuberculosis, syphilis, malignant and benign growths, inflammatory and non-inflammatory orchitis and epididymitis, hydrocele, varicocele, hematocele, spermatocele, cystic growths, torsion of the testicle, intestinal hernia, contusions and wounds of the testicle, hemorrhagic infarcts of the testis, fungus, and general hypertrophy of the testicle.

Most of these conditions are easily diagnosed. Thus, varicocele is easily distinguished by the knotted and tortuous veins of the spermatic or pampiniform plexus which surround the spermatic cord. In the average case this condition can not be mistaken for anything else. In extreme cases, however, the loose mass of veins and their surrounding tissues constitute a well-defined tumor which must be differentiated from other tumors; it is soft and mushy to the touch and gives to the finger a characteristic sensation that has been described as resembling a bundle of worms in a bag. The scrotum on the affected side is dragged down and elongated to a greater or less degree by this mass of veins and often assumes a purplish color.

Hydrocele is often difficult to diagnose, especially as against the presence of hernia. Unless tension be extreme, hydrocele is usually painless, and is thus distinguishable at once from inflammatory conditions. There are no constitutional symptoms. Its smooth, pear-shaped surface, absence of glandular involvement, and the normal testicle and epididymis when they can be felt, differentiate it from tuberculosis, cancer and cystic disease. Fluctuation, irreducibility and in most cases translucency, as determined by the "light test," differentiate it from hernia, and, as a final measure, aspiration of its clear serous fluid removes all doubt as to the diagnosis. Bloody fluid removed by the aspirating needle indicates the presence of an hematocele, unless, perchance, the testicle has been wounded in the act of aspiration. It should be remembered, however, that neither hydrocele nor hematocele precludes the presence of a malignant growth; on the contrary, the latter is often thus accompanied.

Acute inflammation of the epididymis and testis proper is easily distinguished from malignant growths. The acute onset, pain, tenderness, rise of temperature and other evidences of acute inflammation make the diagnosis simple enough, especially as these symptoms are usually associated with a history of gonorrhea or trauma. In old men with prostatic hypertrophy, the possibility of the development of acute orchitis or epididymitis without apparent cause should always be borne in mind. At the same time we should not forget the comparative frequency of recurrent attacks of epididymitis and orchitis months and even years after the predisposing gonorrhea has been forgotten by the patient. In obscure cases of inflammatory swelling of the testicle the presence of parotitis and other infectious diseases should be determined.

Wounds, contusions and torsion of the testicle should not be mistaken for anything else, and similarly with that non-pathologic form of testicular hypertrophy which is often found as a compensatory physiologic condition, after one organ has been removed by disease or operation. Sometimes a condition is met with in which one gland is abnormally large while the other is correspondingly small; neither condition is necessarily pathologic.

Another fairly common tumor of the testicle is a collection of fluid either in the tunica vaginalis testis, or, as is more often the case, in a cyst in and about the epididymis. This condition is known as spermatocele, or encysted hydrocele of the testicle. The fluid is a milky serum containing the spermatic elements, principally spermatozoa. These cysts may be small or large, they are usually found separating the epididymis from the testicle, and form a more or less irregular, pear-shaped, fluctuating tumor. Sometimes more than one of these tumors will be noted. When these cysts rupture into the tunica vaginalis, as they often do, they constitute the so-called spermatic hydrocele, which, in essence, is similar to the common form of hydrocele, except that the fluid contains spermatozoa.

These spermatic cysts should not be confused with the less frequent cystic growths of the testicle proper—teratoma, benign and malignant cystic disease. Clinically it is well-nigh impossible to differentiate one type from another.

*Patient.*—J. S., aged 36, Russian, married, tailor by occupation, presented himself on Jan. 13, 1906, with a large mass in the left side of the scrotum.

*History.*—Family and personal history negative as to gonorrhea, cancer, tuberculosis and syphilis. Patient is the father of five healthy children, the youngest an infant a few days old, and of good health. The testicular swelling, though considerably smaller than at the time of examination, had been present for about ten or eleven years, but only during the past ten months had it grown to the present great size. There was little or no pain, except for the dragging sensation caused by the weight of the mass, pulling continuously on the cord and scrotum.

*Examination.*—From apex to base the mass was 7 inches long, 4½ inches in width and 13 inches in circumference at its widest part. To the touch it was hard and tense, and in the upper portion fluctuation could be determined. The testicle proper and the epididymis could not be distinguished. There was no elevation of temperature, pulse was normal, appetite and general health good. Heart, lungs and abdominal viscera were likewise normal. There was no glandular enlargement anywhere in the body. The patient believed that during the last few months he might have lost a few pounds in weight. The urine was clear and normal in all respects; the prostate was normal in shape, size and consistency. The seminal vesicles could not be felt. Bacteriologic examination of the urine for tubercle bacilli was negative; the secretion from the massaged prostate revealed no gonococci nor tubercle bacilli.

*Subsequent History.*—Three days after the first visit I inserted a trocar and withdrew about three ounces of clear serum, which was also examined bacteriologically for tubercle bacilli with negative result. After the fluid was withdrawn the testicle and epididymis were easily distinguished. The former was about three times its normal size, hard and stony to the touch, but not tender, except on excessive pressure. The epididymis was at least four times its usual thickness, hard, nodular and of serpentine outline. It was separated from the testicle proper by a distinct deep groove, but it did not present the so-called "clam-shape" of Keyes.

*Diagnosis.*—Other conditions having been eliminated, there

remained to consider tuberculosis, syphilis and malignant disease. The absence of tubercle bacilli in the hydrocele fluid and in the prostatic secretion, the absence of tubercular involvement of the prostate and seminal vesicles as well as the thoracic and visceral organs was considered strong enough evidence to eliminate tuberculosis. For various reasons the tuberculin test could not at that time be made.

*Treatment.*—The patient was put on fairly large increasing doses of iodid of potassium (up to 100 grains three times daily), in addition to which he received two injections of salicylate of mercury (each containing 15 drops of a 10 per cent. solution); the iodid was continued for about three weeks, but the injections were stopped because of the pain which followed. As a substitute for the salicylate he was given half a dozen injections of a 1 per cent. solution of mercuric iodid in oil, which were found to be quite painless and well tolerated. After four weeks of this treatment it was seen that the mass had diminished slightly in size, but not sufficiently so to justify the belief that it would respond further. Within a few days after the first aspiration the fluid returned and was again withdrawn. This time it came out dark and bloody in contradistinction to the clear fluid withdrawn at the first tapping. This operation was repeated at intervals of several weeks, and each time the same bloody fluid was withdrawn.

*Operation.*—On May 18 I removed the testicle and epididymis *en masse* and the patient made an uneventful and quick recovery. Dr. Jeffries, at the Polyclinic Hospital, made an examination of the tumor and reported it to have been a round-celled sarcoma, showing cystic degeneration. On September 10, three months after the operation, the patient, who had been under observation all this time, complained of a dull, heavy feeling in the upper gastric region. On examination it was found that the left lobe of the liver was considerably enlarged and was exerting pressure on the pyloric end of the stomach. The liver grew at an enormously rapid rate, the gastric symptoms increased and the man lost flesh and strength rapidly. He was again put on antisyphilitic treatment, with the hope of effecting some relief, but it was of no avail. He was unable to continue at his work and returned to his birthplace in Russia. I have not heard from him since.

Apart from the difficulty in making a diagnosis without operation, this case presents these interesting features:

1. The growth was present in a dormant stage for about ten years.
2. For some unknown reason, the tumor took on a sudden growth, very rapid in its nature, and reached its maximum size in the comparatively short period of ten months.
3. Careful search revealed the absence of metastatic deposits where such deposits might have been expected.
4. The patient's general health did not apparently suffer at any time before removal of the tumor.
5. The antisyphilitic treatment did have a slight, ephemeral effect on the mass.
6. Within three months after operation the liver showed metastatic deposits of an extremely malignant type, accompanied by great deterioration in general health for the first time.

ADDENDA: In a communication received March 24, 1907, from Dr. Herman Lorber, just returned from Vienna, the doctor writes: "Perhaps you will be interested in a patient of yours whom I saw in the Krankenhaus in Vienna. It was the patient with sarcoma of the testicle whom you showed at the medical meeting last year. Professor von Noorden showed the patient. He has lost considerable flesh and strength, the liver is enlarged considerably but the spleen even more so, and very hard. The diagnosis of sarcoma was of course confirmed."

24 East One Hundred and Nineteenth Street.

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**Naming of Carbon Compounds.**—Hydroxyl is the monovalent group (OH)', considered as derived from water (hydrogen oxid).—*Pharm. Rev.*, August, 1906.

## COMPLETE RESTORATION OF FUNCTION OF TORN SPHINCTER ANI MUSCLE AFTER 23 YEARS OF ATROPHY AND DISUSE.

ROBERT H. M. DAWBARN, M.D.
NEW YORK CITY.

The accusation is sometimes made that surgeons who have had the good luck to score an exceptional success are apt to rush into print and report it to the profession without waiting a reasonable time in which to ascertain whether or not the cure can properly be classed as a permanent one. However, I think we may consider the following patient definitely and permanently cured, whose case—possibly unique in point of time between her sphincteric loss and its restoration—I now publish for the first time six years after the operation. My library search has not been thorough, and reports from those who have completely cured patients longer afflicted would be of interest.

The patient, a lady in the family of a physician in this city, states that she can now control, even during an occasional diarrhea, her bowel movements as perfectly

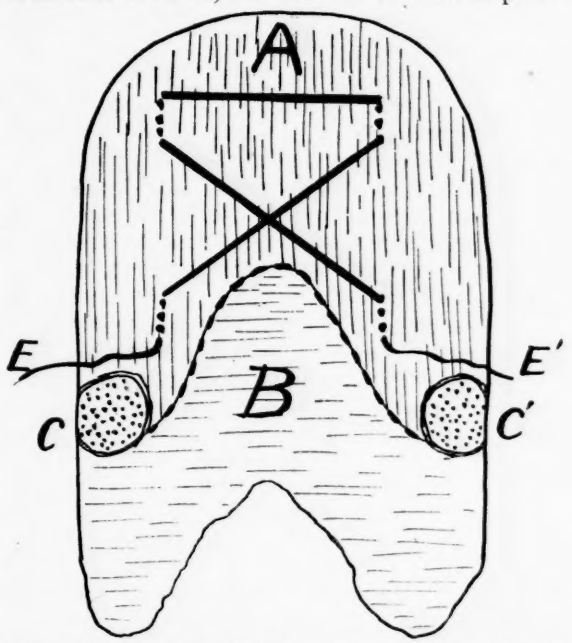


Fig. 1.—A, the upper shaded part, represents the raw surface of rear wall and sides of vagina from which the flap B, the lower shaded part, hangs down. The arched broken line between A and B indicates the upper limit of the rectal and vaginal tear. One must not dissect closely enough to this to threaten the blood supply of the flap. C and C' are the exposed ends of the sphincter ani. These are brought together. The apposition of the raw surfaces above will be helped by using as a first step the suture, the ends of which, E and E' are to be tied together.

as ever before the tear. If this muscle, during such a great period of absolute disuse and atrophy, can so retain the capability of restoration of function after the necessary operation it would seem that never in a lifetime is this power hopelessly lost and that it would never be unreasonable to hope that the power of any or all of the sphincters lost through injury might be regained.

The following are briefly the essential facts of the case: Twenty-three years and nine days before the operation the patient was torn so badly during an instrumental birth that the tear, as I found on examination, extended half way up the rear wall of the vagina and to the same level of the front wall of the rectum. In consequence one opening common to both resulted, and during all these years she had absolutely no control

of her bowel movements. Almost wholly disbarred from going into society, her misery during this period can readily be imagined.

On November 27, 1900, I operated, assisted by Drs. Charlton Wallace and J. W. D. Maury, her family physician, Dr. Stuart Close being present. The technic employed was one which in its simplicity and application seems hard to improve on. It was devised by Dr. Ristine of Knoxville, Tenn., more than twelve years ago and its technic was published by him some years afterward in the *American Journal of Obstetrics and Diseases of Women.* The details, accompanied by a rough sketch, which may serve better than words to make clear one or two steps, are as follows: The rectum being empty and cleansed, is packed with gauze. A horseshoe-shaped flap of mucous membrane, with its toe upward, is next outlined. The incision for this begins on either side of the vagina at the ends of the torn and retracted sphincter ani. The cut ascends on either side and meets at the toe, placed, in a case as bad as this, just as high as possible behind the cervix uteri—almost touching the cervix—so as to waste no length of flap that it is possible to secure. With a tear only dividing the sphincter, and not the rectum, obviously the horseshoe cut need not ascend so high.

The apron of the flap thus turned down will have its sound, i. e., its mucous membrane surface toward the feces and its raw surface forward. It will be dissected down as far as the upper end of the tear permits. If of proper length its lower or free ends should now hang as low as the anal level behind it. Any excess of length of this apron is a protection, for the time, to the dissected flesh in front against accidental infection, and if it should not finally shrivel, it can be snipped away.

Search is next made for the torn sphincter, the ends of which must be freshened and then brought into mutual apposition by means of tanned or chromicised catgut. The sphincter muscle, even in this case, could still be plainly recognized. By dissecting down and lengthening the horseshoe ends as needed, tissue is at length reached which when seized and pulled on by the forceps can be felt to draw the sphincter on either end. Before apposing these ends we should insert and tighten the continuous suture shown as E and E′ in the accompanying sketch. This helps to prevent any "dead space." The curved needle is inserted and brought out but four times in passing this stitch. Following the union of the sphincter the surgeon will probably perform the customary operation for torn perineum.

Before concluding, a moderate section of the sphincter at the rear anal margin should be made (in a case recently torn) to weaken it temporarily—for protection against the tearing out of the important stitches uniting its ends. Perhaps I need not say that in the case under discussion, after twenty-three years of disuse, it was thought unnecessary to weaken the sphincter further in this way. When this is done no stitch is taken; a clot fills the tiny opening made by the slender blade. The bowels are moved the second day and each day thereafter. Electricity and strychnin are of value in aiding the sphincter to recover its function.

I would refer those especially interested to the article by Dr. Charles G. Child, Jr., of this city, in the *Journal of Obstetrics and Gynecology of the British Empire,* July to December, 1905. It will be found that in a few particulars my operation differs from that of Dr. Ristine—the principle, however, is his, as also should be the entire credit of this, one of the very few operations which seem to me perfect in technic.

## APPENDECTOMY DURING HERNIOTOMY.

JOHN A. HAWKINS, M.D.
Professor of Rectal Diseases in the Medical Department of the Western University of Pennsylvania; Rectal Surgeon to St. Francis Hospital.
PITTSBURG, PA.

The article by Dr. John A. Wyeth, in THE JOURNAL, Nov. 24, 1906, reminded me of two patients on whom I recently operated.

The first patient, a man of 67, had suffered with a large inguinal hernia for many years. On opening the sac I found that it contained the cecum, the adherent appendix and part of the ileum. The appendix, though not inflamed, was removed, and the abdomen closed by the imbrication method of Fowler. Recovery was uneventful.

The second case was that of a woman of 62, who suffered from an inflamed bubonocele. The sac contained a structure of whose identity I was not altogether certain until I had examined it closely, but which proved to be the appendix. The constricted ring was incised and the hernia repaired by the Bassini method, the appendix being removed in the usual way. There was nothing unusual about the recovery. The appendix was 10 cm. in length, 12 mm. in diameter at the distal end and 4 mm. at its attachment, being club-shaped.

219 Sixth Street.

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## A CASE OF INFECTION BY STRONGYLOIDES INTESTINALIS.*

J. N. HALL, M.D.
Visiting Physician to the Denver City and County Hospital.
DENVER.

This parasite, associated with Cochin-China diarrhea, has been reported so rarely in the United States that the following case should be recorded. The exact relationship to tropical diarrheas seems not definitely established:

*Patient.*—A Japanese ship's cook, aged 40, was admitted to my service in the Denver City and County Hospital, Oct. 18, 1906.

*History.*—We learned that he had visited many ports in Asia and other parts of the world, had been in America seven years, in Colorado three years. He had been sick for ten weeks, although below par for three or four months. He had a slight cough, had probably lost 20 or 30 pounds in weight, and was moderately anemic. He had five to eight stools in the twenty-four hours, mushy in consistence, foul smelling and of clay, slate or dark green color. No blood nor mucus. He complained of constant pain in the abdomen, and in the rectum on defecation. He vomited a few times, especially after eating sweet food.

*Examination.*—Physical examination of the chest and abdomen was negative. The urine was acid, sp. gr. 1030, a trace of albumin, no sugar, no bile, indican increased. A few small and narrow hyaline and granular casts, occasional blood cells and leucocytes. The examination of the sputum was negative. The blood, two weeks before death, showed: Hemoglobin (Tallquist), 65 per cent.; red cells, 3,200,000; white cells, 4,400. Moderate poikilocytosis and no megaloblasts nor normoblasts were found. A differential count of white cells showed polynuclear neutrophiles, 51.5 per cent.; lymphocytes, large and small, 47 per cent.; eosinophiles, .05 per cent. The absence of eosinophilia is to be noted.

Suspecting amebic dysentery, I asked Dr. B. B. Blotz, in charge of the laboratory, to examine the stools. His report is as follows:

"Larvæ of the *Strongyloides intestinalis* were found in great numbers. At least fifteen examinations were made and the parasite was present in each. An attempt was made to obtain the adult by incubating the larvæ for seventy-two hours at

* Reported, with exhibition of specimens, to the Denver City and County Medical Society, No. 6, 1906.

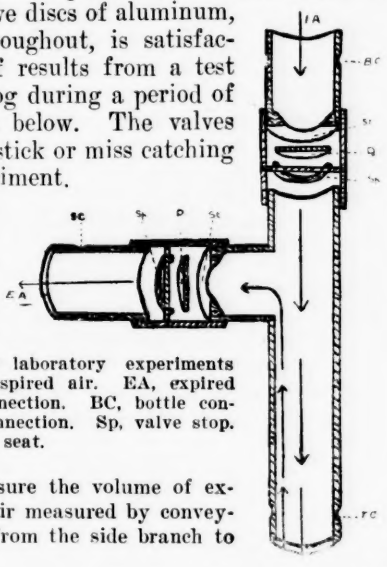
37-38 C. This was unsuccessful. At one examination a parasite was found having the same characteristics as the larvæ, but three times as long. The ova of the parasite were not discovered. Red blood cells and Charcot-Leyden crystals were found at various times. In the last two or three stools examined there were numerous black crystals, rhombic, quadrangular and needle shaped, probably of hematogenetic origin. These crystals were also found in the vomitus. A search was made for the ova of the ankylostoma duodenale, said to be often found in association with this parasite, but they were not discovered, nor could other ova be found. During the last few days the patient vomited several times in each twenty-four hours, and the parasites were abundant in the vomitus."

In every specimen of the fresh stools, mounted with water, under a power of 50 diameters, could be seen from five to thirty of the larvæ in active motion. After an hour or two, most of them became immobile, but could be resuscitated by adding more water and warming the slide slightly. The patient was fed on a liquid diet and given thymol in a dose of 15 grains three times a day. At the suggestion of Dr. Ralph Taylor, who had seen the parasite in his Philippine experience, 3 grains of santonin were added later. Although the parasites lost their activity, so that but one or two sluggish ones could be found in a field, with perhaps a dozen dead ones, the patient steadily lost ground, and died on Nov. 17, 1906. No autopsy could be obtained.

## RESPIRATION VALVES.

C. C. GUTHRIE, M.D.
Professor of Physiology and Pharmacology, Washington University Medical School.
ST. LOUIS.

The valves shown in the accompanying drawing were designed primarily for use in preventing the waste of volatile anesthetics that commonly occurs in mammalian experiments when a Wollf's bottle is used in connection with a trachea tube and for simplifying the measurement of expired air in such experiments. Construction of plated brass with valve discs of aluminum, or of aluminum throughout, is satisfactory. An average of results from a test made on an 8 Kg. dog during a period of four hours is given below. The valves were not observed to stick or miss catching throughout the experiment.




Valve mechanism for laboratory experiments with respiration: IA, inspired air. EA, expired air. SC, spirometer connection. BC, bottle connection. TC, trachea connection. Sp, valve stop. D, valve disc. St, valve seat.

1. Animal with tube in trachea breathing through a Wollf's bottle arrangement. Valves connected on the far side of the bottle in order to measure the volume of expired air. Volume of air measured by conveying it through a tube from the side branch to a spirometer.

2. Same arrangement as in 1, only the valves were inserted between the dog and bottle so that the *expired* air did not pass back through the bottle as in the first case.

RESULTS.

1. Amount of ether used per L. of air, 0.83 c.c.
2. Amount of ether used per L. of air, 0.42 c.c.

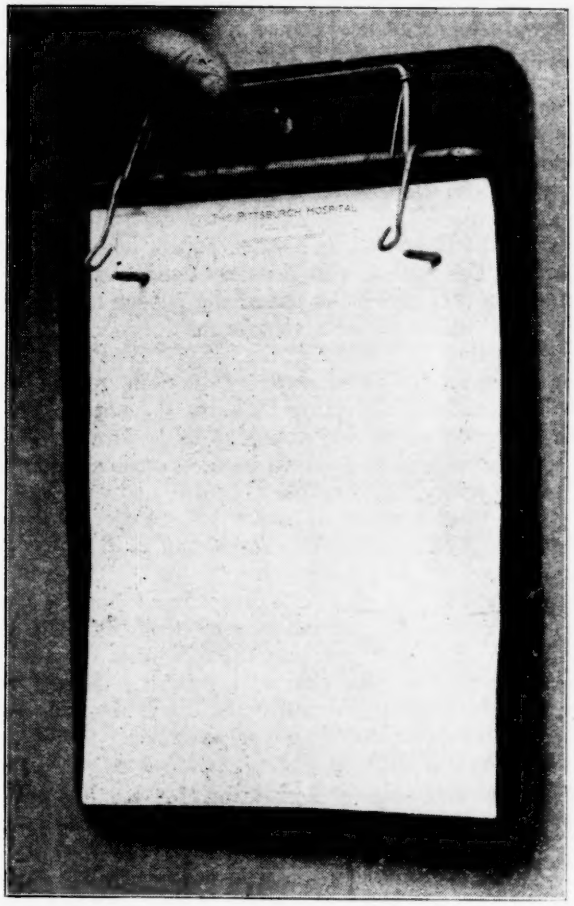
The average volume of expired air per minute was 3866 c.c. For simplicity calling it 4 L., the amount of ether used per hour in 1 was 199.2 c.c., and in 2, 100.8 c.c.

The use of the valves also prevents contamination of the anesthetic contained in the bottle by condensation of moisture from the animal's breath.

## AN IMPROVED BEDSIDE CHARTHOLDER FOR HOSPITAL USE.

J. D. SINGLEY, A.M., M.D.
Surgeon to the Pittsburg Hospital.
PITTSBURG, PA.

In this chartholder the back is a rigid light enameled metal plate. The clamp or clip is of heavy wire and has two contact points, but instead of relying on metal or small rubber tips at the contact points, as in those on the market, two rings come in contact with the back. Two upright pins about one inch high are set into the back over which the rings drop when the spring of the clamp is released. The record sheets, after padding, are perforated, at a very slight cost, by the printer at the proper place for the pins.



With such a holder the record sheets can only be released by exerting sufficient pressure to raise the ring of the clamp clear of the pin and lifting the sheets off the pin. No adjustment is required to keep the various sheets in alignment while the proper sequence of the sheets remains as originally placed.

812 North Highland Avenue.

**Malaria and Tuberculosis.**—P. Gracieux has been investigating conditions in tropical Africa and Mexico; he found malarial antecedents in 70 per cent. of the natives affected with tuberculosis. He believes that this malarial infection paves the way for tuberculosis later, and that it is absurd to claim that the native races are "peculiarly predisposed to tuberculosis." They have only unusual opportunities for malarial infection, and this is the cause for the prevalence of tuberculosis. His article opens the *Cronica Med. Mexicana*, for 1907.

## "RUBBER TUBE PERCUSSION."

ARNOLD C. KLEBS, M.D.
CHICAGO.

Dr. F. M. Pottenger has recently recommended[1] immediate percussion with a rubber tube, which, he believes, is a "method of greater precision" and possessing "superior advantages over methods in common use."

The usefulness of all methods of percussion depends, of course, largely on the individual who uses them; good as well as bad results can be obtained with almost any method. But a new clinical method must have both intrinsic as well as heuristic value, otherwise it constitutes merely an encumbrance to an already confusingly large diagnostic armamentarium.

If we analyze Pottenger's announcement we find that he really does not describe a method, but merely advocates the use of a rubber tube instead of the hammer. One naturally surmises, since nothing to the contrary is stated clearly, that the tube is to be used as one ordinarily uses the hammer or the finger, i. e., with a rebounding blow. We find some intimation, however, that here, unlike ordinary percussion, in which the percussor is retired as rapidly as possible so as not to deaden the vibration, the instrument is left where it struck. It would have helped toward the understanding of the "new method" if this and other points had been made clearer. The author also does not enlighten us on his contention that "with the use of the rubber tubing there is no noticeable thoracic resonance." Since the whole value of the "old method" is based primarily on the acoustic appreciation of modified thoracic resonance, it would be rather interesting to know the author's scientific evidence which induces him to believe that with his tube he is able to produce isolated sounds emanating from the underlying organs. He can not well imagine that the mere contact of a flexible, resilient tube can prevent this to a noticeable extent, and so give him "the simple tone of the underlying tissue." Contrary to his assumption, which also is in contradiction to all accepted theories of percussion and acoustics, I should think that he must get this "tone," plus that of the thoracic wall and plus that of the tubing itself. Thus far we have tried to minimize the disturbing by-sounds by firmly adapting our finger or plessimeter to the chest wall.

But the author is evidently out for results, not for theories, and so I have tried the "new method," adhering faithfully to his directions so far as they go. I found that the tube when struck, indeed, emits a sound, but that the strength and quality of this sound is chiefly influenced by the length of the portion of the tube striking the chest (the length varying between 1½ and 2½ inches), by the length of tubing held in the hand and also by the pressure exerted on the tubing by the hand. To a certain extent, of course, this sound inherent to the swinging tube is modified by the vibrations of the percussed object, but it needs a very discriminating ear to isolate it from the other by-sounds. As to the sensation of resistance to which the author particularly directs attention as being "transmitted to the hand," I had none sufficiently perceptible to direct my judgment. With some dexterity and after frequent application I was able to outline, though only very coarsely, the organs of the chest. An exact direction of the stroke with a tube vibrating so easily in one's hand is an impossibility, and this becomes painfully evident when one tries to percuss with it the dependent parts of the thorax in a patient lying in bed, or the axilla, or the apices. Over the latter, the determination of their height, the outlining of the acoustic fields of Krönig, all important in the examination of tuberculous subjects, and the discovery of smaller foci of infiltration, easily determined by the common method, could in no way be facilitated by the use of the tube. These negative results were corroborated by several able clinicians.

It does not seem to me, therefore, that this *inventum novum* is destined to supplant the old methods, which in the proper hands reach a high degree of perfection and are based on scientific facts. Percussion is and will remain an art. An instrument, as such, I believe does not hinder perfection in it, though I do not make use of any, but a percussion tube that emits a sound of its own seems *a priori* unprofitable, to say the least.

1. THE JOURNAL, March 23, 1907, 1027.

## PROBABLE PLACENTAL TRANSMISSION OF TUBERCULOSIS.

JOHN R. WILLIAMS, M.D.
ROCHESTER, N. Y.

Because of the scarcity of data on the subject of placental transmission of tuberculosis, the following is deemed worthy of report:

*Patient.*—Mrs. K., aged 30, American housewife, eight months pregnant.

*History.*—Patient complained of cough, night sweats, failing appetite and loss of weight; she gave a family history of tuberculosis, one sister who had lived and slept with her having died of the disease a short time previously.

*Examination.*—The chest anteriorly and posteriorly revealed typical signs of tuberculosis in apices of both lungs. There was a loss of weight of 20 pounds in ten weeks in spite of pregnancy. The sputum contained both elastic tissue and tubercle bacilli.

*Subsequent History.*—One month later, patient in normal labor, gave birth to a full-term, apparently healthy, 7-pound boy. The placenta and cord were immediately placed in 4 per cent. formalin solution and sent to Dr. A. S. Warthin, Ann Arbor, Mich., for examination. The child was taken at once to another house, and was never afterward handled, nursed or brought in contact with the mother. He was fed on modified milk, and for about six weeks made fair progress, gaining slightly in weight. Then, in spite of the most studious care in feedings, he began to decline. He was taken to the Infants' Summer Hospital at Ontario Beach and kept there for some weeks, but to no avail. The child, like the mother, now presented the typical signs of general tubercular involvement, which need not be detailed. At this stage both mother and child were taken to the same house, although they were isolated from each other and had different nurses. The mother declined rapidly after the termination of pregnancy, dying six months later. The child outlived the mother by only one month. Both patients were seen by several other physicians, all of whom concurred in the diagnoses.

Dr. Warthin, after a number of careful examinations, was unable to find any evidence of tuberculosis in the placenta. The child died and was taken to a distant point for burial at a time when I was absent from the city, hence a postmortem study was not made, which is unfortunate, inasmuch as it robs the case of the confirmatory evidence necessary for a positive demonstration.

**The School Girl.**—Dr. James Fraunfelter, Canton, Ohio, states (*Ohio State Jour of Med.*) that the development of the mind is largely dependent on the efficiency of the body, and that the expansion of the moral element so well expressed by the word "character" is similarly intertwined in such close relationship that neglect of a part is derangement of the whole.

# New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

*(A list of all accepted articles is published on one of the advertising pages of The Journal in the first issue of each month.)*

*(Continued from page 1109.)*

## DIACETYL-MORPHINE HYDROCHLORIDE.

Diacetyl-morphine hydrochloride, $C_{17}H_{17}(C_2H_3O_2)_2NO.HCl$, is prepared by dissolving diacetyl-morphine in dilute hydrochloric acid, concentrating the neutral solution by evaporation and crystallizing.

It is a white, crystalline, odorless powder, having a bitter taste, showing a neutral reaction with congo and melting at 230° to 231° C. (446° to 447.8° F.).

It is soluble in 2 parts of water and soluble also in alcohol, but insoluble in ether.

Its aqueous solutions are precipitated by alkaline hydroxides, the precipitate being soluble in excess of the reagent, and by alkaline carbonates. In other respects the reactions are the same as those given under diacetyl-morphine (which see).

It is incompatible with alkalies and their carbonates, tannic acid and other precipitants of alkaloids. It is decomposed by mineral acids, particularly when heated.

*Actions and Uses.*—When given in small doses Diacetyl-morphine Hydrochloride has apparently no effect on any of the vital functions except respiration, which it renders slower, the volume of the individual respirations being increased, but usually not sufficient to compensate the slowing, the result being a diminution in the total amount of air respired. In large doses it may produce dizziness, nausea and occasionally constipation, and, in poisonous amounts, twitching of the extremities, great exhaustion, and dimness of vision may be added. The temperature becomes subnormal and the pulse rapid and thready. The habit is readily formed and leads to the most deplorable results. It is said not to produce costiveness. (This is not true, according to some observers.) It is readily absorbed from mucous membranes. It lessens irritability of the respiratory center, thus allaying cough, but does not depress the respiration as much as morphine.

On withdrawing the drug from habitués there is said to be a tendency to respiratory failure which may be dangerous.

Diacetyl-morphine and its hydrochloride are recommended chiefly for the treatment of diseases of the air passages attended with cough, difficult breathing and spasm, such as the different forms of bronchitis, pneumonia, consumption, asthma, whooping cough, laryngitis, and certain forms of hay fever. It has also been recommended as an analgesic, in the place of morphine in various painful affections.

Toxic symptoms should be treated by the administration of caffeine hypodermically and of hot coffee by the stomach. To avoid respiratory failure in the treatment of diacetyl-morphine addiction, it has been suggested to substitute morphine for the diacetyl-morphine and then treat the patient for morphine addiction.

*Dosage.*—0.0025 to 0.005 Gm. (1/24 to 1/12 grain) to adults 3 to 4 times a day, the maximum dose being 0.01 Gm. 1/6 grain. To children it may be given in doses varying from 0.0002 to 0.001 Gm. (1/300 to 1/60 grain), according to the age. Hypodermically it may be administered in the form of a 2 per cent. solution in the same doses. It has been applied locally to the throat, to the uterus on tampons, and by suppository for painful pelvic affections generally, but there is no evidence that it produces any local anesthetic action.

## HEROIN.

A name applied to Diacetyl-morphine, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

## HEROIN HYDROCHLORIDE.

A name applied to Diacetyl-morphine Hydrochloride, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

## LECITHIN.

The esters of oleic, stearic, palmitic or other fatty acid with glycerophosphoric acid combined with cholin; occurring in combination with proteids in many animal and vegetable tissues, especially in nervous matter and egg-yolk.

Lecithin is best prepared from egg-yolk (in which it exists as vitellin) by dissolving out the lecithin by strong alcohol.

It is a yellowish-brown, waxy solid, of peculiar odor, soluble in an equal volume of cold absolute alcohol, readily soluble in chloroform, petroleum, benzin, and fats, less readily in ether. It is insoluble in water, but swells, giving the peculiar "myeline forms," and decomposes on prolonged contact. It is hygroscopic on exposure to air.

The alcoholic solution is precipitated by platinum or cadmium chloride. It is decomposed by alkalies with the formation of choline and trimethylamine. The ash contains phosphoric acid. The different lecithins contain from 3.84 to 4.12 per cent. of phosphorus and 1.73 to 1.86 per cent. of nitrogen. The ratio of nitrogen to phosphorus should be as 1 to 2.21.

Lecithin is incompatible with alkalies; it should be kept in well-stoppered bottles and should be protected from the light.

*Actions and Uses.*—Lecithin acts as a stimulant to nutrition and not as a direct nutrient. The number of the red blood corpuscles and the amount of hemoglobin are increased. There is also a slight increase in the proportion of large mononuclear leucocytes. The appetite is improved and there is a retention of nitrogen and a diminution in the excretion of phosphoric and sulphuric acids, indicating a storage of proteids. The uric acid is perhaps slightly diminished. Lecithin, even in large doses, is not toxic.

The ordinary diet contains from 5 to 15 Gm. (75 to 225 grains), and some observers claim that the benefits of the administration of lecithin can be obtained by an increased use of lecithin-containing food (eggs, etc.), but others claim that the raw or combined lecithin is ineffective.

Lecithin is held to be useful wherever there is faulty nutrition or growth, and is especially recommended as an addition to cow's milk for artificially fed infants. If no improvement results after ten days' treatment it is stated that it is useless to continue the drug.

*Dosage.*—It may be given by mouth in doses of 0.1 to 0.5 Gm. (1.5 to 8 grains) per day, in pill form, before meals, or, hypodermically 1 Cc. (15 minims) of a 5 per cent. solution in oil, daily. Infants, one-third of these doses.

*(To be continued.)*

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SATURDAY, APRIL 6, 1907.

## EXPERIMENTAL GASTRIC ULCER.

The importance of discovering a definite method by which can be produced experimentally ulcers in the stomach that in every way are analogous to genuine human gastric ulcer needs no emphasis. The prevention and the healing of human ulcers would thereby unquestionably be promoted in various ways. Recently reports have been made of results in this field of experimentation which indicate that noteworthy progress is being achieved. Thus Turck[1] has shown that by feeding dogs for variable periods with large quantities of cultures of colon bacilli ulcers not unlike round or peptic ulcer in man may be produced in the stomach and duodenum. The exact mechanism whereby ulcers are produced under these conditions has not been worked out, but the indications point to a combination of local and general disturbances. It would seem that the method, if found by other investigators to give reliable and constant results, will prove of considerable value for the study of experimental gastric pathology.

By careful study of guinea-pigs used in testing diphtheria antitoxin, Rosenau and Anderson of the Hygienic Laboratory found that in more than one-half of these animals dying before the tenth day after injection of diphtheria toxin there is present a sharply defined area of congestion, hemorrhage, or ulceration near or at the pyloric extremity of the stomach. In no case was perforation observed. Animals that recover from sub-lethal doses of toxin may show evidences of having had this lesion and it would seem as if we have in diphtheria toxin a definite means for the experimental production of gastric ulcers, at least in the guinea-pig, and it is to be hoped that the possibilities of this method will be thoroughly investigated.

Probably the results obtained by Fütterer[2] in rabbits have the greatest immediate bearing on the clinical and therapeutic phases of human gastric ulcer. So far as can be made out, Fütterer's present method of procedure is to excise a small piece of the mucous membrane of the stomach and then to maintain the animals in a state of chronic anemia by administration of blood-destroying chemical substances. Macroscopically and microscopically the ulcers so obtained resemble the human ulcer markedly; like the human ulcer they appear to prefer, so to speak, the pyloric region in the vicinity of the smaller curvature; and their chronic course is held by Fütterer to be in large measure if not wholly dependent on continuation of general anemia. From the fact that anemia is so essential for the initiation and the continuance of experimental gastric ulcer, Fütterer draws the conclusion that much may be accomplished by way of therapy, both preventive and curative, if the physician pay due regard to the condition of the blood. The apparent ease with which ulcers may be produced by Fütterer's method indicates that it too may prove of service in the further experimental study of gastric ulcer, which naturally will concern itself with the finer mechanisms of causation, and with the effect of various means and conditions on established ulcers.

An interesting question arises in connection with these various methods and that is whether or not the ulcers produced by their means are alike in their essential features. In order to determine this point careful comparative morphologic studies must be made of the ulcers at the various stages of their development. In his ulcers Turck describes a remarkable hyperplasia of acid cells, the analogue of which does not seem to have been observed so far in the case of human ulcers. Now it would be interesting to learn if ulcers produced by other and different means are associated with this hyperplasia. Human material, especially such as would illustrate the earlier stages of the formation of ulcer, should be collected for careful study and comparison with experimental ulcers.

1. THE JOURNAL A. M. A., 1906, xlvi, 1753.
2. Festschrift für Rindfleisch, 1907, p. 81.

## THE RELATION OF THE STREPTOCOCCUS TO SCARLET FEVER.

Notwithstanding the immense amount of investigation devoted to it, the etiology of the acute exanthemata still remains more or less of a mystery. It is true that in certain diseases, variola and scarlet fever for example, supposed protozoan parasites have been described which are thought to bear an etiologic relationship to these diseases. It can not be said, however, that these parasites have been generally accepted as the true causes of the diseases in question, for they have not yet been shown to be constantly associated with the lesions, and some observers even question their parasitic nature and regard them, like the so-called cancer parasites, as peculiar cell inclusions. In the case of scarlet fever the *Cyclaster scarlatinalis* of Mallory has not been generally accepted, for while some have conceded its parasitic nature others have denied this. The question of the etiology of this disease is still under discussion, and Dr. Hektoen's paper in this issue of THE JOURNAL[1] gives in a terse and critical manner the views of those who are opposed to the view that scarlet fever is caused by a protozoon and believe that it is a form of streptococcus infection, and at the same time the objections to the streptococcus theory are impartially set forth.

1. Page 1158.

As Hektoen's paper shows, there is much evidence which suggests a possible relationship between scarlet fever and some variety of the streptococcus. On the one hand we have proof that in the vast majority of fatal cases of scarlet fever the streptococcus is present; on the other hand we have the knowledge that streptococcus infections apart from scarlet fever may be associated with throat and skin symptoms almost indistinguishable from true scarlatinal infection. Not only are so-called surgical and puerperal scarlet fever of streptococcal origin, though not true scarlet fever, but in certain streptococcal throat infections skin lesions almost impossible to differentiate from the true disease may occur.

All this, however, is not evidence that the streptococcus is the actual cause of scarlet fever. It does show that this organism is very frequently associated with the disease and is probably responsible for the great mass of fatalities, but there is evidence that fatal cases of scarlet fever can occur, especially the fulminating ones, in which streptococci are not present. The lack of streptococci in the infectious skin scales, their relatively poor resistance as compared with the known resistance of scarlet fever virus, and their occasional complete absence in some fatal cases, make it seem likely that the streptococcus is not the cause of scarlet fever, but merely a secondary invader. It is well known that this micro-organism plays a similar rôle in smallpox, a type of disease analogous to scarlet fever. Even if we assume that the rôle played by the streptococcus is a secondary one, we must not forget that it causes most of the fatalities, and one of our constant cares in the disease should be to protect the patient from the first against possible infection from other patients who harbor streptococci.

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## GOVERNMENT SUPERVISION OF VACCINE VIRUS.

The efforts recently made in Pennsylvania and Connecticut to secure the repeal of statutes making the vaccination of children a condition of their right to attend public schools recalls the unreasonable prejudice that still exists against this beneficent prophylactic.

The opposition to vaccination appears to rest on the fundamental declarations that it is useless and dangerous, and that its compulsory enforcement is an invasion of individual rights. With the evidence now available it would seem that its utility must be conceded, for if there is one measure in preventive medicine that has been demonstrated beyond question it is that vaccination, properly performed, affords protection against smallpox. Individual license to do as one pleases is not an inalienable right, and community life denies the individual that privilege, especially if in so doing he becomes a menace to the public health. By a uniform course of decisions the courts have upheld the legality of laws requiring vaccination as a condition precedent to the right to attend school.[1] The right of the community for the public welfare to enforce vaccination has also been affirmed. The dangers of vaccination, greatly exaggerated at all times, have now been reduced to a minimum. Practically the only danger remaining is accidental infection such as may occur in any open wound. This, in vaccination wounds, may be eliminated in a great measure by observing careful technic in performing the operation.

Reference has previously been made[2] to the beneficial results following the government control of vaccine virus, and it is now understood that, in accordance with an additional regulation issued March 13, 1906, by the Secretary of the Treasury, at the instance of the Public Health and Marine-Hospital Service, each lot of vaccine virus must be examined bacteriologically by the manufacturer to determine its freedom from pathogenic micro-organisms, and a special examination is required of every lot to determine the absence of tetanus. This supervision is no doubt largely responsible for the improved character of the vaccine virus now offered on the market in this country.

The Annual Report of the Public Health and Marine-Hospital Service, just issued, contains a list of establishments manufacturing this product under government license. Samples of the products of these firms are purchased from time to time on the open market and examined in the Hygienic Laboratory for purity and potency. These laboratory examinations indicated great improvement in the quality of vaccine virus following the administration of the law approved July 1, 1902, regulating the manufacture, barter and sale of viruses, serums, toxins and analogous products. With the view of obtaining information as to whether or not the practical results coincided with the laboratory data, the Surgeon-General addressed a circular letter to local health officers throughout the country for facts concerning the relative incidence of sore arms accompanying vaccinations during the winter 1904-1905 as compared with previous seasons. Nine hundred and fifty-one replies were received to this inquiry, of which 237 gave no data; 8 of the replies stated that there were more sore arms reported, one of these, however, attributing the complication to other causes than the character of the virus; 52 stated that they had not observed any difference in the number of sore arms during the year, while 554 reported that there had been fewer sore arms.[3] It is known that the operation of this law has prevented the sale in interstate traffic of "green" virus, and from this report it is evident that marked improvement in the character of vaccine virus has taken place.

Evidence of this character should be carefully considered by legislative bodies before action is taken looking to the repeal of vaccination laws now on the statutes, as such a step can but be regarded as a retrogressive step in preventive medicine.

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1. Dock: Amer. Jour. Med. Sciences, February, 1907.

2. The Journal A. M. A., Dec. 24, 1904.

3. Annual Report, Public Health and Marine-Hospital Service, 1906.

## THE HOUSING PROBLEM.

The relation of the dwelling to health constitutes a problem, the seriousness of which the medical profession in this country has not yet fully appreciated. To the physician in Europe it appeals with force, since the defects of housing, especially of the lower classes, are much more apparent there than here. In Berlin, according to E. Roth,[1] 43 per cent. of all householders live in apartments of one room, and that often unheated, and more than 70 per cent. must be content with one or two rooms as the most comfortable dwelling which they can afford. These miserable conditions are made worse by the fact that the rent of such rooms is so high that it must be reduced by taking lodgers or roomers. The number of people to a house tends to increase as time goes on, having risen in Berlin from 71 to 77 in the decade from 1890 to 1900. In addition to the danger to health from overcrowding, problems are presented in consequence of dampness, insufficient light and poor ventilation, which are of vital interest to the physician. Roth attributes rheumatism, catarrh, colds and an increased susceptibility to infection to the dampness of the apartments, especially of those used for sleeping. This defect may be due to the improper use of the house, especially for washing, drying clothes, etc., but much of the dampness is due to faults in the location or construction of the building. Another important matter in relation to health resulting from the location of the dwelling is the noise occasioned by factories, railroads, and street traffic. Some of this noise is unavoidable in a large city, while part of it may be lessened by judicious police regulations, but the power of the police is limited to suppressing such noises as can be shown to be detrimental to the health of the citizens. The exact effect of such noise is undetermined, but it is probable that it is a factor in the causation of that product of modern civilization, neurasthenia.

In this country the increasing popularity of flat life is creating a problem that sooner or later must be met and solved. Such a life is essentially an unnatural one. A majority of flats, although provided with modern conveniences in the way of heat, water supply and artificial light, are so constructed that one or more of the rooms can never be exposed, either directly or indirectly, to the sun's rays, in many cases requiring artificial light for their illumination. That such rooms furnish ideal conditions for the development of germ life is evident. Too often it is the case that bedrooms or water closets are ventilated and lighted only by an air shaft—and this, too, in the apartment buildings of the better grade. Such conditions are inimical to the health of those living in such a building. To the health of the housewife in particular is flat life prejudicial. Add to the unnatural excitement of city life the lack of facilities, in the way of gardening, etc., for her to get near to Nature, and the psychical effect of being more or less closely confined within the narrow limits of her apartment, and we have conditions that predispose to the development of any latent neurotic tendencies which may exist.

The regulation of building and the provision of sanitary dwellings is emphatically a medico-social function, in the performance of which the physician must take a leading part by virtue of his special knowledge. He can be of assistance in framing suitable laws and in advising proper police regulations. The German physician comes in touch with this problem also through his services to the societies for industrial insurance against illness. The American physician, although less likely to find such a sphere of influence, will have abundant opportunity to advise his private patients regarding their choice of a residence. While the housing problem is not as acute in America as in Europe, we should not allow the opportunity to pass for the establishment of laws and regulations which will prevent the development of a situation so favorable to disease and immorality. By acting with a wise foresight, we shall be fulfilling our highest duty as guardians of the public health.

1. Zeitsch. f. aerzt. Fortbildung, March 15, 1907.

## THE NUMERICAL RELATION OF THE SEXES.

Statistics of births are now complete enough to afford a fairly reliable basis for some interesting conclusions. These are made the subject of an elaborate study by J. B. Nichols,[1] who has obtained data aggregating 693,785,722 living births and 13,635,986 still-births, or 707,421,708 births in all. These data are chiefly supplied by the exhaustive compilation of birth statistics published in *Statistique générale de la France*[2] supplemented by some data from original and other sources. The statistics regarding illegitimate births are of questionable value in consequence of the incomplete report and registration of these births, and, therefore, the estimate of total births is subject to some doubt. Some problems relating to the proportion of sexes have either received insufficient investigation or the data are imperfect so that a definite conclusion can not be given. This is true of the relations to war, climate, race, country and city, age, vigor, and social and financial condition of the parents, etc. Leaving these out of consideration, the principal conclusions established by this study are: The proportion of males to females at the age of differentiation of the sexes is higher than at any subsequent period and closely approaches the ratio of 1,063 sons to 1,000 daughters; more male fetuses die during pregnancy than female, and more males are still-born than females, so that the proportion of males to females among children born living averages, among peoples of the white race, 1,057 to 1,000. Among illegitimate children the proportion of males to females is lower, both of those born living and of those who perish during pregnancy, than in the case of legitimate births. The greater relative mortality of the male sex extends

1. Mem. American Anthropological Assn., February, 1907, i, part 4.

2. Statistique annuelle du mouvement de la population, 1903, xxxiii.

in a marked degree through the first year of life and in a diminishing ratio thereafter. These statistics seem to indicate a slight relative weakness of the male sex which, after all allowances have been made for accidents at birth in consequence of larger size, seems to exhibit less power of resistance to the causes of disease than the female. The proportion of sons is greater in large families than in small ones, Nichols asserts, but progressively decreases as the number at a birth increases. After all, however, while these studies and deductions are interesting and suggestive, they can not be regarded as safe bases for forming conclusions that may be accepted as satisfactory.

## THE AGE LIMIT.

Railroad managers, who are generally understood to know their own interests and those of the corporations under their charge, are undergoing apparently a change of views, at least in some cases, as to the expediency of excluding men of full majority or middle age from employment. If this is as we must suppose the result of experience, it means that the man of over 35 has been found to have still a reasonably long period of usefulness before him, even in the trying duties of a railroad employé. Heretofore it has been the theory that it is not profitable for roads to employ men over this age, and this, it seems, has been found too narrow a limit. While there is no doubt that many men are at their best efficiency before the fourth decade has passed, it does not necessarily follow that this is always the case or that there are not frequently greater possibilities for usefulness after that period than before. General rules are not capable of too universal application, and there are many occupations in which a rigid rule regarding age limit would be unprofitable. The fact that the railroad companies are apparently beginning to recognize this truth is significant. Young men will always be to the fore in many lines, but much of the best work will always be done by men somewhat more advanced in years. It is probable that of late years we have placed the age limit unreasonably low.

## SANITATION AND ETHICS.

In a recent issue of THE JOURNAL[1] editorial notice was given to the statements of Dr. Solis-Cohen regarding the sanitary effects of some of the Jewish ritual observances. The Jewish religion is not altogether peculiar in this respect and Christianity has inherited from the Jews some valuable sanitary practices, one of the most important of which, the seventh day rest, was not specially emphasized by Dr. Solis-Cohen. That it is not universally observed in Christian populations is admitted, but that it would be better if it were probably no physician would deny. The institution of Lent was undoubtedly a saving ordinance from a sanitary point of view during a considerable period of the world's history, and in many countries it probably still has a beneficial effect on the public health. The change from a salt meat diet, which was for many centuries largely the rule during the winter months in Europe, to a more or less exclusively vegetable one was a salutary measure that would hardly have been thought of, much less adopted, save for the injunctions of religion. In some respects, however, religious practices have been directly insanitary, and this was particularly the case during the Middle Ages under the influence of the asceticism of that time. Taking into account other religions than Christianity one would not have to look far for plenty of evidence of the conflict between religious observances and enlightened sanitation. Christianity and Judaism stand almost alone among religions in that regard for human life and welfare which is the basis of all sanitary regulations. Even in the most enlightened of heathen nations sanitary science is practically non-existent, save where it has been introduced through the influence of Christian nations. Whatever is conducive to the moral well-being of a people also raises its physical standards, and so far as religions conform to moral concepts so far are they favorable to physical as well as to moral welfare. The sanitarian in his practical teachings, if not in his theories, is also a moralist. This is a truism that does not always appear as self-evident as it should.

1. Ritualistic Sanitation of the Jews, THE JOURNAL, March 2, 1907, 801.

## THE "MEDICAL INSTITUTE" FRAUDS.

Advertising quacks, having as a rule a certain definite line of treatment (?) for all patients, have long been known to fabricate the diagnoses of their victims' ailments to suit such treatment. The knocking down of these men of straw, in fact, constitutes the theatrical side of their business. Most of these concerns at least have been consistent enough to have some slight degree of relationship between their diagnoses and their treatments. In the suit instituted against the "Wisconsin Medical Institute" recently mentioned in these columns it appears that even the element of consistency is sometimes lacking. According to the testimony of the "doctor" employed by the institute not only were false diagnoses given, but the treatment (?) instituted would not have helped the patients even had the diagnosis been correct. The testimony was fortified by the fact that the physician in question was an unwilling witness and that his statements had to be drawn out by sharp questioning on the part of the state's attorney. Medical and surgical institutes of the advertising type have been profitable concerns in the past and such testimony indicates the reason. A few more prosecutions actively carried out and the details thoroughly ventilated in the public press, ought not only to put some of these concerns out of commission but give the business generally a sort of advertisement that would make it less profitable in the future. Unfortunately, the worst of these establishments are the most invulnerable on account of the difficulty of obtaining the testimony of those who have put their reputations in their power.

**Farming for the Insane.**—I am fully convinced that a thoroughly equipped farm properly conducted will contribute more to the cure of the insane than any other one thing we may resort to.—W. E. Taylor, M.D., in *Charities and the Commons.*

# Medical News

## ALABAMA.

**Sputum Cups.**—Dr. Gaston J. Greil, health officer of Montgomery, will distribute gratis 500 sputum cups to consumptives who apply.

**Hospital Notes.**—Dr. J. C. Moore, Anniston, has converted his residence into a private sanitarium, with accommodation for eight patients. The hospital will be open for the use of the practitioners of the city.

**Personal.**—Dr. Richard F. Michels, Montgomery, celebrated on March 9 the sixtieth anniversary of his entering the practice of medicine.——Dr. Shirley Bragg, Montgomery, was recently appointed state inspector of jails, almshouses and cotton factories.——Dr. John W. Watts, Birmingham, has been selected as physician for the Birmingham convict camp, and Dr. John C. McLeod, Bay Minette, for the Dolive camp.

**Society Meeting.**—The De Kalb County Medical Society, at its annual election, held at Fort Payne, elected Dr. Sidney J. Vann, Collinsville, president; Dr. William S. Duff, Fort Payne, vice-president, and Dr. Wiliam E. Quinn, Fort Payne, secretary-treasurer.——At a meeting of the Medical Society of Colbert County, held in Tuscumbia, March 21, the following officers were elected: President, Dr. Taylor H. Henry; vice-president, Dr. Julius T. Haney, and Drs. H. W. Blair and Morriss Henry, censors.

**Government Takes Over Quarantine.**—On April 1 the United States Public Health and Marine-Hospital Service has directed Dr. Edward Francis, in charge of the Mobile Marine Hospital, to assume control of quarantine at Mobile and to begin the inspection at Fort Morgan of all tropical vessels. Dr. Rhett Goode, president of the quarantine board of Mobile Bay, has been advised that the government has approved the sale of the local quarantine station and has received a check for $18,000, covering the purchase.

**Medical College Transfer.**—At a meeting of the faculty of the Medical Department of the University of Alabama the building and contents formerly known as the Mobile Medical College was turned over to the medical department of the university. The present members of the faculty were reappointed. The first payment on the appropriation made by the state for the improvement of the institution will, it is understood, be made April 1. Commencement exercises of the Medical Department of the University of Alabama will be held April 15.

## ARKANSAS.

**Physician in Trouble.**—Dr. Oscar S. Burrow, Hot Springs, charged with violating the drumming ordinance, was found guilty and his license to practice was revoked and a fine of $100 assessed.

**Personal.**—Dr. W. B. Welch, Fayetteville, was seriously hurt by a fall at Fort Smith, March 20.——Dr. A. L. Carmichael, Little Rock, has been elected by the State Board of Charities to fill the unexpired term of Dr. A. J. Harrison as physician for the charitable institutions.

**Society Meetings.**—The Saline County Medical Society, at its recent meeting, held at Benton, elected Dr. John W. Melton, Alum, president; Dr. Charles Prickett, Traskwood, vice-president, and Dr. Charles J. Steed, Hurricane, secretary-treasurer.——At the annual meeting of the Lincoln County Medical Association, held at Star City, the following officers were elected: President, Dr. J. K. McClain, Star City; vice-president, Dr. John T. Palmer, Varner; secretary-treasurer, Dr. Benjamin F. Tarver, Star City; censors, Drs. W. C. Kimbro, Tyro, and Charles W. Dixon; delegate to the state medical association, Dr. John T. Palmer, Varner, and alternate, Dr. J. F. Johns.——At the annual meeting of the Tenth Councilor District, or Northwest Arkansas Medical Association, held at Fort Smith, March 20, about fifty members were present. Dr. J. N. McCormack delivered an address to the public at the high school auditorium and the following officers were elected: President, Dr. W. N. Yates, Fayetteville; vice-president, Dr. James J. Smith, Paris; secretary, Dr. James A. Foltz, Fort Smith; treasurer, Dr. O. M. Bourland, Van Buren. Fayetteville was selected as the place for the next meeting.

## CALIFORNIA.

**Building for Physicians.**—The Sawyer building, eight stories high, of steel construction, at present being erected at Sutter and Jones streets, San Francisco, is built to meet the special requirements of physicians and dentists. The building will cost $300,000 and is expected to be ready for occupancy April 1, 1908.

**Personal.**—Dr. Percy Sumner has resigned as resident physician of the California State Prison and Dr. W. M. Thorn has been appointed to fill the vacancy. Dr. Sumner is going to take graduate work on the eye, ear, nose and throat in the East.——Dr. Charles B. Pinkham has been appointed chief surgeon of the Western Pacific Railway, with headquarters at San Francisco.——Dr. Charles Freedman, Los Angeles, chief police surgeon at the Receiving Hospital, has resigned.——Dr. Chauncey Wilder, Oakland, formerly of Elgin, Ill., shot and killed a burglar who was trying to enter his house March 15.——Dr. A. A. Stafford, San Francisco, is expected to return from New York early next month.——Dr. F. M. Pottenger, Monrovia, will leave for a four months' trip to Europe about April 1.

**Society Elections.**—At the annual meeting of the Solano County Medical Society, at Vallejo, March 14, these officers were elected: President, Dr. C. E. Turner; vice-president, Dr. J. W. Huckins; secretary, Dr. J. J. Hogan, and treasurer, Dr. Fred T. Bond.——The twenty-third semi-annual meeting and banquet of the San Joaquin Valley Medical Society was held at Hanford, March 12. Dr. W. T. Barr was elected president; Dr. Fowler, vice-president; Dr. D. H. Trowbridge, secretary, and Dr. T. M. Hayden, treasurer.——The Central California Health Officers' Association, at its meeting in Hanford, March 11, elected Dr. R. W. Musgrave, Hanford, president; Dr. S. W. R. Langdon, Stockton, vice-president; Dr. John R. Butin, Madera, secretary, and Dr. G. L. Long, Fresno, treasurer.

## COLORADO.

**Personal.**—Dr. Francis B. Rothrock, Colorado Springs, was run over after a breakdown of his buggy and was painfully injured.——Dr. and Mrs. Horace G. Wetherill, Denver, are taking a tour in Europe.——Dr. Michael Bashoar, Trinidad, has been elected vice-president of the American Tuberculosis League.

**Society Meetings.**—At the annual meeting of the Fremont County Medical Society, held in Florence, Dr. Royal C. Adkinson, Florence, was elected president; Dr. Pitt A. Wade, Canon City, vice-president; Dr. Raynor E. Holmes, Canon City, secretary-treasurer, and Dr. Wilbur T. Little, Canon City, delegate to the state association.——The Teller County Medical Society, at its annual meeting held in Cripple Creek, elected the following officers: President, Dr. Will F. Hassenplug, Cripple Creek; vice-presidents, Drs. Benjamin F. Jones, Goldfield; Walter W. King, Cripple Creek, and Albert C. McClanahan, Victor; secretary, Dr. Thomas A. McIntyre, Cripple Creek; treasurer, Dr. Alfred J. Campbell, Victor, and delegate to the state association, Dr. Albert C. McClanahan, Victor.

## ILLINOIS.

**Health Bill Progresses.**—House bill No. 468, amending the State Board of Health Act of 1877, passed the House of Representatives March 28 by a vote of 99 to 1. There has been no further change in the status of the other bills previously noted in THE JOURNAL.

**State Board Orders Prosecution.**—Acting under directions from the secretary of the State Board of Health, the state's attorney at Peoria is reported to have instituted proceedings against C. M. Tharp, Kingston Mines, for practicing medicine without a license. A judgment was, it is reported, found against Dr. Tharp in 1902 for the same offense, and Dr. Egan has instructed the state's attorney immediately to collect the penalty of $200 prescribed in this case.

### Chicago.

**In Aid of Hospitals.**—The concert at Orchestra Hall, April 1, netted $3,000 for St. Mary of Nazareth Hospital.——The Fresh Air Fund for the Jackson Park Sanitarium for Babies was increased by $2,000 as the result of a benefit performance, March 28, at the Garrick Theater.

**Cocain Seller Fined.**—Albert Dahlberg, against whom the police have been waging a crusade for selling cocain, pleaded guilty March 28, and was fined $150 and costs by Municipal Judge Newcomer. He was also put on probation and ordered to report to the court every two weeks.

**A High Death Rate.**—The death rate in Chicago is unprecedented in the history of the health department. During the week ended March 30, 744 deaths were reported, equivalent to an annual death rate per 1,000 of 18.40. The death rate for the corresponding week of 1906 was 14.80 per 1,000. Pneumonia caused 172 deaths; consumption, 85; heart disease, 55; nephritis, 45; violence, including suicide, 40; cancer, 34, and acute intestinal diseases, 30.

**Communicable Diseases.**—During the week ended March 30, 169 new cases of scarlet fever were reported, with 16 deaths; 88 cases of diphtheria, with 8 deaths, a decrease in new cases of 33 in the case of scarlet fever and 35 of diphtheria, as com-

pared with the preceding week. An increase of 18 cases of measles was noted, 126 cases being reported for the week. No cases of smallpox have been found during the week, and the Isolation Hospital still contains 17 patients.

## IOWA.

**Tuberculosis Hospital Site.**—Two pieces of property west of the Iowa River, near Iowa City, have been deeded to the state as a site for the new tuberculosis hospital, to be built at a cost of $70,000. The actual building of the hospital is expected to begin during the summer.

**Smallpox.**—The prevalence of smallpox at State Center has necessitated the closing of churches and schools and the interdicting of public gatherings.——Four cases of smallpox are reported from Davenport.——The public schools of Anita have been closed on account of smallpox, three cases of the disease having been reported.——Clemons is reported to have two cases of smallpox.

**College Officers and Faculty Elected.**—Dr. Frederick E. Franchere was elected president of the board of trustees of the Sioux City College of Medicine at its annual meeting; Dr. R. H. Munger was elected vice-president; Dr. Edwin D. Frear, secretary; Dr. Robert M. Gallen, professor of materia medica; Dr. Howard N. Brothers, professor of therapeutics; Dr. William Gillaume, professor of diseases of children; Dr. Frank S. Johnson, professor of diseases of the nervous system, and Dr. Frederick A. Franchere, professor of diseases of the eye, ear, nose and throat. Drs. William S. Tharp and Edwin D. Frear were elected members of the board of trustees, and Dr. John A. Dales was re-elected a member of the board.

**Personal.**—Dr. Charles E. Ruth, Keokuk, on the eve of his leaving for his new home in Colorado, was the guest of honor at a banquet March 15, given by his professional brethren of Burlington.——Dr. Ira D. Kauffman has been appointed health officer of State Center, vice Dr. Pliner W. Coe, resigned.——Dr. William O. Parish, Osceola, on the occasion of his sixty-eighth birthday, was presented with a Morris chair by the Clark County Medical Society, of which he is president.——Dr. Alden H. Wight, New Hampton, was stricken with cerebral hemorrhage, March 16.——Dr. Schroeder, Traer, has returned from Germany.——Dr. and Mrs. Isaac E. Nervig, Sioux City, were injured in an ice avalanche at Niagara Gorge, March 12.——Dr. Russell J. Hemphill, Plymouth, was thrown from his carriage in a runaway accident recently, suffering severe cuts and bruises.

## KANSAS.

**Epidemic Diseases.**—More than 60 cases of measles were reported in Fort Scott.——Measles is reported to be epidemic in Leavenworth.——More than 1,000 high school students of Topeka were recently exposed to smallpox and ordered vaccinated. Topeka has at present 9 smallpox patients in the Isolation Hospital.——During the first 18 days of March more than 100 cases of contagious diseases were reported and placed under quarantine at Topeka.——The health officer of Wichita reports 42 cases of smallpox in that city.——It is reported that there are more than 40 cases of smallpox in Hutchinson.

**Hospital Notes.**—Evergreen Hospital, a private sanitarium at Leavenworth, was destroyed by fire March 18, with a loss of $50,000. The inmates escaped uninjured. The Planters' House, Leavenworth, is to be used as a sanitarium until the management of the hospital secures permanent quarters.——The Commercial Club of Topeka has taken on itself the responsibility of securing a site for the proposed Sisters of Charity Hospital in that city. The sisters will build a hospital to cost between $25,000 and $50,000, on the condition that the city furnishes a site.——The governor has authorized an addition to the Post Hospital, Fort Riley, to cost $35,000. The hospital was built last year at a cost of $40,000.

## KENTUCKY.

**Epidemic Diseases.**—Sharpsburg and its vicinity are said to be suffering from an epidemic of influenza.——Measles is reported to be epidemic at Paducah.——On account of the prevalence of scarlet fever at Borden the public schools have been closed.

**Academy Officers.**—At the annual meeting of the Louisville Academy of Medicine Dr. J. Rowan Morrison was elected president; Dr. Hugh R. C. Manning, vice-president; Dr. Oscar E. Bloch, secretary, and Dr. Gavin Fulton, treasurer. Dr. Daniel M. Griffith, Owensboro, president of the state medical society, was the guest of honor.

**Tuberculosis Clinic.**—The Kentucky Anti-Tuberculosis Association has decided to purchase 53 acres, between Taylor Boulevard and the Eighteenth Street road, Louisville, for $13,300, on which a hospital will be erected. The association has arranged to hold two clinics a week at the City Hospital and to furnish a visiting nurse free to the poor, the city to provide quarters and medicine.

**Incorporated Milk Commission Inadvisable**—At the last meeting of the Jefferson County Medical Society the milk commission deemed it not advisable to incorporate the commission, as had been suggested at the last meeting, as the state pure food authorities had in charge all legal matters which might arise. The commission reported that of three supplies of certified milk all had a bacterial count of less than 5,000 and one of these a count of only 1,000, the standard being 10,000 per c.c.

**Personal.**—Dr. and Mrs. Joseph M. Mathews, Louisville, have returned after three months in Florida.——Dr. William A. Keller, city physician for the west end, Louisville, is reported to be critically ill.——Dr. William T. Willis, Mount Sterling, recently pushed his right arm through a glass window, cutting an artery and nearly bleeding to death.——Dr. Joseph W. Hill, formerly of Bardstown, and for the last four years superintendent of the Kentucky Institute for the Education and Training of the Feeble-Minded Children, Frankfort, has resigned to enter private practice, and will probably settle at Versailles.

**Eradication of Bovine Tuberculosis.**—A special meeting of the Kentucky Veterinary Association was held at the Galt House, Louisville, March 28, in the interest of a measure to be introduced in the next legislature for the eradication of tuberculosis among dairy cattle. During the discussion two of the local veterinarians made the statement that the inspection of dairies as now practiced by them is a farce; that it is easy to make money by driving to a fence along side a dairy, asking the number of cows in the herd, writing a certificate that they are healthy and receiving 50 cents a head therefor, It was stated that 25 to 35 per cent. of the cattle supplying milk to Louisville are tubercular; and a still larger percentage, around Covington.

**Faculty Officers of Merged Colleges Elected.**—At a meeting of the combined medical faculties of the University of Louisville and Kentucky University, to be known in the future as the Faculty of the University of Louisville, Medical Department, held March 27, in Louisville, the following officers were elected: President, Dr. James M. Bodine; dean, Dr. Thomas C. Evans, and secretary, Dr. Richard B. Gilbert. Dr. Bodine in accepting the office stated that with the present session he was rounding out his fortieth year as dean of the university, and that it was with regret he relinquished it for the more responsible position of president of the faculty. An advisory committee was appointed, composed of the chancellor, Drs. John C. Willis, Joseph B. Marvin, Thomas L. Butler, Adolph O. Pfingst and John G. Cecil. This committee, with the faculty, will have in charge the details of the college work.

## MARYLAND.

**Fight Against Consumption.**—Nearly $8,000 of the $10,000 fund required for the work of the Maryland Association for the Prevention and Relief of Tuberculosis has been subscribed. A branch of the society has been organized at Hagerstown, with Dr. James W. Humrichouse as vice-president, and Dr. Christian R. Scheller as treasurer.

**Personal.**—At a meeting of the Society of Colonial Wars, held March 28, the anniversary of the settlement of Maryland, Dr. Bennett B. Browne was elected librarian, and Dr. H. Barton Jacobs, surgeon.——Dr. Brice W. Goldsborough, Cambridge, is ill at Johns Hopkins Hospital, Baltimore.——Dr. Charles G. W. MacGill is ill at his home in Catonsville.

**Bequests.**—By a decision of the Circuit Court, March 18, the Union Protestant Infirmary, Baltimore, received a legacy of $5,000 devised to it in 1901, with interest from that date.——The late Martin Kelly, Baltimore, after some small bequests, devises one-half the residue of his estate to St. Agnes' Sanitarium.——Moses Pels, a wealthy shoe dealer of Baltimore, has empowered his executors to make certain charitable bequests, no stipulation as to the amount or the institution being made.

**Insanity on the Increase.**—According to the twenty-first annual report of the lunacy commission, prepared by the secretary, Dr. George J. Preston, Baltimore, insanity is on the increase in Maryland. Additional accommodation must be provided for the indigent insane, and the coming legislature will be called on for an increased appropriation to this end. Of the causes of insanity named in the report heredity leads, alcohol coming next. Employment is considered the best medicine for the chronic insane, when the condition of the patient will permit its use.

## MASSACHUSETTS.

**Mueller in Boston.**—Dr Friedrich Mueller, Munich, spoke March 27 before the Boston Medical Society on "Social Legislation in Germany and Its Influence in the Care of the Sick."

**Alumni Association Meets.**—The Western Massachusetts Alumni Association of the Medical Department of the University of Vermont, Burlington, held its third annual banquet at Springfield, March 21. The guest of honor was Dr. Henry C. Tinkham, Burlington, dean of the medical school, and Dr. Charles J. Downey, Springfield, officiated as toastmaster. The following officers were elected: President, Dr. Charles J. Downey, Springfield; vice-president, Dr. James M. Fay, Northampton, and secretary-treasurer, Dr. Mortimer J. Stoddard, Springfield.

**Epidemic Diseases.**—The White Star Liner *Cymric* was held at quarantine, March 25, on account of a case of smallpox on board. The thousand steerage passengers were vaccinated before the steamer was released.——Because of the number of cases of scarlet fever in Boston, the Board of Health has asked an increase in its appropriation from $210,000 to $240,000.——At the annual town meeting of Brookline, $238,178 was appropriated for the public safety and health account.——A sophomore at Harvard is reported to have died at the college hospital, March 20, from spinal meningitis.——Fourteen cases of variola were reported in Lawrence, March 24, and seven more developed during last week. The disease is in mild form, and the patients have all been removed to the Isolation Hospital.

## NEW YORK.

**More Typhoid at Katonah.**—Three new cases of typhoid fever have been reported at the village of Katonah. Dr. Darlington has gone over the entire territory and found everything in a hygienic way apparently as it should be, and contamination of the city water supply seems impossible.

**Sanitarium Gabriels.**—This institution, which is located in the Adirondacks and cares for those in the first stages of tuberculosis, is seriously handicapped by lack of funds and asks $65,000, of which $8,461 must be raised before May 24. About $135,000 has already been spent on buildings and equipments.

**New State Hospital.**—The State Lunacy Commission wants the state to buy a site for the building of a hospital on the cottage plan, and has drafted a bill for passage by the legislature providing for this. The state's lease of Ward's Island expires in five years; therefore, future disposition of the many patients there now necessarily occupies the commission's attention.

### New York City.

**Personal.**—Dr. Mary Crawford has been appointed to the surgical staff of the Williamsburg Hospital.——Dr. and Mrs. John J. Nutt sailed on the *Pennsylvania* for Hamburg, March 30.

**Tablet to Dr. Fowler.**—The Society of Ex-Internes of Seney Hospital, Brooklyn, will unveil a bronze tablet to the memory of Dr. George Ryerson Fowler. The tablet will be placed in the main hall of the hospital.

**Pneumonia on the Increase.**—According to the winter report of the Board of Health during the period from Dec. 8, 1906, to March 9, the deaths from pneumonia in Greater New York were 4,105, while those from tuberculosis numbered only 2,496.

**Talk on Charity.**—Attorney General Bonaparte delivered a lecture at Carnegie Hall, from which the Society of St. Vincent de Paul realized $2,000, which will be devoted to its charitable works in this city and its fresh air farm at Spring Valley.

**Appeal for Samaritan Hospital.**—A movement is on foot to raise $200,000 for the erection and equipment of Samaritan Hospital. This hospital is the outgrowth of a dispensary established six years ago because of the rapid growth of the section in which it is located. The hospital was incorporated in 1904.

**Milk Hearing Ends.**—The last public hearing before the committee of aldermen, on the subject of pasteurization of the city milk supply, was held March 29. In view of the stand taken by the Board of Health and endorsed by the Academy of Medicine, the scheme for wholesale pasteurization was given up, though the crusade for better conditions in the dairies will be prosecuted with diligence.

**Glasses for School Children.**—At the last meeting of the Board of Education there was a spirited discussion over the question of furnishing glasses for school children with defective vision. It was stated that 36,000 children in the schools are suffering from defective vision, and that the majority of the parents of these children are unable to furnish them with glasses. A resolution was appended to this report asking for $30,000 to fit up rooms for testing eyes and for the provision of glasses, etc. The resolution was laid over until the next meeting.

**Better Hospital for Immigrants.**—The plans for the improvement of the immigrant station at Ellis Island and for the completion of the huge contagious diseases hospital which is being built on a small artificial island adjoining Ellis Island, will be completed by July 1, when the appropriation will be available, and the work will be rapidly pushed to completion. The recent Congress appropriated $850,000 to be expended on these improvements. Of this sum $400,000 is for remodeling the main building, and $250,000 was added to a former appropriation for the hospital.

**City Hospitals Full.**—The Commissioner of the Charities Department has presented a report to the State Board of Charities telling of the overcrowded condition of the various hospitals and institutions under his care. During the coming month he will act on bids for the construction of city buildings to cost $2,000,000. The Sea View Hospital for tuberculosis patients on Staten Island had been halted by an injunction obtained by real estate dealers and owners who claim that the institution is for contagious disease and should be under the management of the Health Department. The city has over 10,000 helpless persons to care for and, owing to the growth of population and the influx of immigrants, is confronted with a difficult problem. Even at present all the institutions for the care of this class are overcrowded and the improvements now under way should have been completed years ago.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended March 16, 435 cases of tuberculosis, with 209 deaths; 429 cases of measles, with 13 deaths; 365 cases of scarlet fever, with 25 deaths; 256 cases of diphtheria, with 37 deaths; 55 cases of typhoid fever, with 4 deaths; 45 cases of whooping cough, with 9 deaths; 21 cases of cerebrospinal meningitis, with 16 deaths; and 106 cases of varicella; a total of 1,712 cases and 313 deaths. There were reported to the sanitary bureau for the week ended March 23, 410 cases of tuberculosis, with 169 deaths; 44 cases of measles, with 13 deaths; 375 cases of scarlet fever, with 19 deaths; 318 cases of diphtheria, with 34 deaths; 101 cases of typhoid fever, with 17 deaths; 61 cases of whooping cough, with 12 deaths; 21 cases of cerebrospinal meningitis, with 18 deaths; 99 cases of varicella and 3 cases of smallpox; a total of 1,832 cases and 282 deaths.

## PENNSYLVANIA.

**Diphtheria Epidemic.**—Diphtheria has become so prevalent at Intercourse, near Lancaster, that the school board has closed the public schools and will not have them reopened this spring.

**Must be State or Private Hospitals.**—Governor Stuart has vetoed a bill for mixing state and private management of hospitals, a practice well established in the state. There are hospitals that will not accept state aid, but there are others that accept it under the present system, but would refuse it rather than submit to partial state control. The bill directed the governor to appoint two directors or trustees of all institutions, hospitals, etc., which receive state aid for maintenance or other purposes. The state would not obtain control of the institutions, but only the means of interfering with private control.

**Care of Insane Inadequate.**—The commission appointed by the last General Assembly to investigate the management of Pennsylvania institutions for the insane, submitted its report to the governor March 24. The commission finds that the housing or custodial care of the insane in the institutions supported by the state is totally inadequate and inefficient, because of the age and crowded condition of the buildings; that those responsible for the treatment and care of nearly 15,000 inmates of these institutions have not kept apace with the highest medical skill and science; that the laws and decisions fixing the responsibility of relatives and others for the support of the inmates have not been enforced, in consequence of which the counties have not been reimbursed in many thousands of cases and the state has not been reimbursed for money amounting to hundreds of thousands of dollars paid for the maintenance of such inmates, which should have been repaid by the estates of inmates or relatives responsible under the law.

**Health Officers for Rural Districts Advocated.**—The cities and boroughs throughout the state are strongly advocating Health Commissioner Dixon's appointment of health officers

for the unprotected rural districts. There are about 2,500,000 people in the state who live in districts where there are no local boards of health. The 700 health officers appointed by Dr. Dixon for the rural districts will see that the regulations of the State Department of Health for the control of communicable disease are obeyed. The enforcement of such regulations in the case of scarlet fever and diphtheria, for instance, will be particularly beneficial. Not only will every case like this be placarded by the health officer, but on the termination of the case he will disinfect the premises properly. Following the placarding of such contagious diseases as require the exclusion from school of the children in the household, the township health officer will serve a written notice on the school in regard to such exclusion. He will also notify the libraries in the district, so that books may not be granted to those residing in infected houses.

Personal.—Dr. Herman A. Brav, Philadelphia, has been elected surgeon in charge of the department of rectal diseases in the American Hospital for Diseases of the Stomach.——Dr. B. Harry Warren, West Chester, has resigned as dairy and food commissioner of Pennsylvania. The salary of the office is $2,500 a year.——Dr. Charles H. Saul, Steelton, who has been seriously ill for several weeks, is convalescent.—Dr. William E. Kunkle, Williamsport, is reported to be seriously ill at his home.——Dr. James S. Koontz, Johnstown, who has been ill for several weeks, has recovered.——Dr. Alfred J. Yost and family, Allentown, have returned from Denver.——Dr. Isaiah F. Everhart, Scranton, was recently stricken with cerebral hemorrhage, and is reported to be critically ill.——Dr. Austin M. Grove, York, has been appointed coroner of York County, to fill the unexpired term of Dr. Herbert F. Gross.——Dr. Sidney Davis, Milton, was thrown from his buggy in a runaway accident recently and severely cut and bruised.——Dr. Franklin F. Arndt, Scranton, has resigned as city bacteriologist, and Dr. Jonathan M. Wainwright has been appointed his successor.——Dr. Jesse G. Kistler, Germansville, who was recently injured about the head in a runaway accident, is reported to be critically ill with erysipelas.

## Philadelphia.

Protest **Against Veterinary Hospital.**—Dr. Henry W. Cattell writes that there was an error in an item in THE JOURNAL, March 30. He states that the act entitled "An act for the protection of the public health, prohibiting hereafter the establishment or maintenance of additional hospitals, pest-houses and burial grounds in the built-up portions of cities," and reading, "that for the purpose of protecting the public health, it shall be unlawful hereafter to establish or maintain any additional hospital, pest-house or burial ground in the built-up portions; provided, however, that nothing herein contained shall be construed as to prevent the maintenance of any hospital, pest-house or burial ground now lawfully established and maintained in such portions of the cities," which was approved by Governor Stone, April 20, 1899, was repealed four years ago, ostensibly for the purpose of permitting the Phipps Institute to establish its hospital for consumptives, but really with the object of allowing the University of Pennsylvania to erect its Veterinary Hospital at Thirty-ninth and Woodland Avenue. Dr. Cattell condemns the health authorities of Philadelphia for the erection of the hospital, at which the most loathsome contagious diseases of the lower animals, transmissible to man, are to be treated.

**Hospital for Insane Open.**—Improvements began under contract last November involving the expenditure of $126,000 having been completed, the Philadelphia Hospital and addition for the insane was opened to the public March 27. As the male indigent were removed in September, 1906, to quarters in the Philadelphia Museums, the building formerly occupied by that class of inmates has been renovated and its new inmates were installed March 28. This renovation includes renewal of practically all floors, the cleaning and painting of walls, the displacement of all antiquated plumbing and the installation of the most modern appliances, the equipment of wards with new furniture, medicine closets, rolling chairs, stretchers and new linen. Other equally important improvements are the provision of new quarters in the old attic for 75 orderlies and attendants, new steam-heating appliances with guards for protecting the sick and insane, metal screens for windows and doors, fire escapes with additional stairways, all of which, on the insane side, are properly enclosed and a new tunnel through which the insane may go to and from meals in inclement weather without exposure. It is hoped that the fresh-air treatment for tuberculosis will soon be adopted on a large scale at the hospitals. At present there are 286 tubercular patients, 223 males and 63 females.

## TEXAS.

**Change in Hospital Plan.**—The new hospital building to be erected at Temple for the use and benefit of the employés of the Santa Fe system at a cost of $100,000, is to be made fireproof, at an additional outlay of $20,000.

**Epidemic Diseases.**—Several well-developed cases of smallpox with one death are reported from Courtney.——Vaccination of all children in the public schools of Dallas was ordered March 8. Two physicians have been appointed for each ward school and the work is to be completed in one day.——The white and colored schools at Stafford and the colored school at Hockley have been closed on account of the prevalence of smallpox.

## UTAH.

**Personal.**—Dr. William R. Tyndale, Salt Lake City, has been appointed assistant surgeon in the National Guard of Utah, vice Dr. Hiram A. Anderson, Salt Lake City, resigned.——Dr. William R. Calderwood, Salt Lake City, has been appointed county physician.——Dr. Alfred J. Ridges, Salt Lake City, has been appointed assistant in anatomy at the Johns Hopkins Medical School, Baltimore.

**Medical Board Named.**—The governor has made the following nominations for members of the State Board of Medical Examiners: Drs. David C. Budge, Logan, Cache County; Amasa S. Condon, Ogden, Weber County; Charles L. Olsen, Murray; Alexander C. Ewing, Salt Lake City; Elias S. Wright, Salt Lake City; Frederick E. Straup, Bingham Canyon; Robert W. Fisher, Salt Lake City; Ralph Richards, Salt Lake City, and A. P. Hibbs, Weber County.

**Epidemic Diseases.**—Several cases of diphtheria have recently developed in Ogden.——The county quarantine physician, Dr. Ferguson, Castledale, states that the cases of smallpox at Orangeville, Ferron and Clawson have recovered and the county is now free from the disease.——It is reported that there have been 24 deaths from cerebrospinal meningitis since January 1.——The inspector of the state board of health reports 14 cases of typhoid at Segirt, Sevier County.

**Work of the Legislature.**—The State Board of Health rejoices over the fact that its work in the legislature has been successful and that its attempts to raise the hygienic and sanitary standards of the state have been appreciated. The following bills have been passed: A bill compelling manufacturers of nostrums to show on a label whether alcohol or narcotics form a part of the formula; a bill providing for the instruction of children in public and normal schools in the prevention of disease and the causes of disease; a new pure food law, similar to the national pure food law; a bill to prevent expectoration in public places and street cars, and requiring cuspidors to be placed in the day coaches on railroad trains; the marriage restriction bill was also passed.

## VIRGINIA.

**Medicine Samples Barred.**—Health Commissioner Henry R. Dupuy, Norfolk, has refused to issue a permit for the distribution of samples of nostrums in the city.

**Correction in List of Officers.**—In the election of officers of the Richmond Academy of Medicine and Surgery, published in THE JOURNAL, March 16, page 957, the name of the third vice-president should have been Dr. Greer Baughman and that of the treasurer, Dr. William A. Shepherd.

**Dispensary Report.**—During 1906 the dispensary of the Medical College of Virginia, Richmond, treated 6,017 patients, 1,358 of whom were white and 4,659 colored. The surgical cases numbered 1,253; those of children's diseases 185, and 9,277 prescriptions were compounded at the dispensary.

**Personal.**—Dr. Oliver C. Brunk has assumed charge of the Eastern State Hospital for the Insane, Williamsburg. The successor to Dr. John M. Henderson will be chosen at the April meeting of the board.——Dr. John W. Williams, Richmond, who has been seriously ill with influenza, is convalescent.——Dr. Trueman A. Parker, Richmond, has been appointed surgeon of the Seventieth Virginia Infantry, with the rank of major.

**Jamestown Exposition.**—Dr. Moses Benmosche, Norfolk, is in charge of the medical exhibit at the Jamestown Exposition. A demonstration of the methods for the prevention and cure of tuberculosis will occupy 5,000 square feet of space. Dr. Benmosche expects to go to Europe in the interest of the exhibit.——Major Charles A. Woodruff, surgeon U. S. Army, has been appointed chief surgeon and chief sanitary officer of the camp of the United States troops and militia, to be established at the Jamestown Ter-centennial Exposition, with headquarters at Norfolk.

## WASHINGTON.

**Personal.**—Dr. B. F. Roller, Seattle, has been dangerously ill with septicemia.——Dr. Sarah J. Dean, Seattle, was thrown from her carriage in a collision with a street car recently, and severely bruised.

**Epidemic Diseases.**—At Quilcene 52 cases of trachoma are reported, and the public schools of the place have been closed and thoroughly fumigated.——Spinal meningitis is reported to have broken out in the Puget Sound Navy Yard, Bremerton, and on the training ship *Philadelphia* at that place. The yard is under quarantine.——At Toppenish 5 cases of smallpox are reported and 17 individuals are under quarantine.

## WISCONSIN.

**Epidemic Diseases.**—Viroqua reports 20 cases of smallpox. ——Eau Claire has four cases of smallpox of a mild type.—— Dr. Gerhard A. Bading, health officer of Milwaukee, recently went to Campbellsport to investigate 13 cases supposed to be smallpox.——Several schools in Outagamie County have been closed on account of an epidemic of measles.——Typhoid fever is reported to be prevalent in Manitowoc.

**Society Meetings.**—At the annual election of the Barron-Polk-Rusk County Medical Society held at Rice Lake, the following officers were elected: President, Dr. William B. Hopkins, Cumberland; vice-presidents—for Barron County, Dr. Grant F. Tanner, Turtle Lake; for Polk County, Dr. Abraham L. Wells, Clear Lake; for Rusk County, Dr. Lambert M. Lundmark, Ladysmith, and secretary, Dr. Olaf M. Sattre, Rice Lake.——At a meeting of the Outagamie County Medical Society, held at Appleton, Dr. William N. Nolan, Kaukauna, was elected president; Dr. Henry W. Abraham, Appleton, vice-president; Dr. Manly J. Sandborn, Appleton, secretary-treasurer; Dr. William A. Shepherd, Seymour, delegate to the state society, and Dr. William E. Zilisch, Hortonville, alternate.

## GENERAL.

**Measles on Battleship.**—It is reported that measles is epidemic on the battleship *Georgia*, and that more than 50 men from that ship have been transferred to the naval hospital, Portsmouth, Va.

**Medical Congress.**—The second National Medical Congress of Mexico will be held in Mexico City, May 28-31, under the auspices of the Medical Society Pedro Escebodo. The governors of the various stat will send delegates to this congress, the work of which will be divided into eleven sections.

**Epidemics.**—It is reported that an epidemic exists at Reynosca, Mexico, from which 100 deaths have resulted. The governor of the State of Tamaulipas, however, denies that an epidemic exists.——The milk supply of Havana and surrounding towns is said to be the cause of a reported epidemic of typhoid fever.

**Personal.**—Passed Assistant Surgeon W. W. King of the Public Health and Marine-Hospital Service has returned to the Bitter Root Valley of Montana to continue his studies of Rocky Mountain spotted fever.——Dr. John N. Thomas, who has been in charge of the Mississippi River Quarantine Station a number of years, is reported to have been offered the position of medical inspector of Central American fruit ports during the quarantine season.——Surgeon-General Robert M. O'Reilly is one of the American delegates to the International Red Cross Congress, which will open in London June 10.

**Accident Insurance Examiners Organize.**—About 30 physicians and surgeons, connected with the examination work of accident insurance companies and claim departments met in Boston March 22, to discuss the plans for the formation of an organization. A committee was appointed to draw up a constitution and by-laws, to report at the next meeting, to be held April 8. The meeting was called at the instance of Dr. Frank E. Allard, who stated that the object of the association is to protect the public and companies from frauds. The committee appointed includes Dr. Frank E. Allard, chairman, and Drs. Edward M. Greene, Francis D. Donoghue, Harry H. Hartung, Charles T. Cutting and Charles O. Kepler, all of Boston.

**Vienna Anglo-American Medical Association.**—This organization was founded Feb. 4, 1906, and is similar to the Anglo-American Medical Association of Berlin, which was described in THE JOURNAL, Jan. 5, 1907, page 65. The society met at first twice a month, but meetings are now held every Friday evening; addresses are given by prominent physicians. All physicians of good standing, irrespective of nationality, engaged in graduate work, are eligible to membership. The purposes of the society are to promote the social intercourse of its members, to furnish information for the early and rapid orientation of new members in regard to board and lodging, restaurants and the scope and relative value of courses, and, furthermore, to promote the scientific advancement of its members. The membership of the association averages from 80 to 100 the entire year. The control of the personnel of certain popular courses has been placed in the hands of the association in order to enable the society to place the rights of priority to enter these courses on the fairest possible basis, namely, the length of time the applicants for admission have been in Vienna. For this privilege the association assumes, in a measure, the responsibility for keeping the courses full and for conducting them to the advantage also of the men who give them. A study of the register of the association shows an increase in the number of American physicians studying in Vienna. During 1904 210 physicians attended the various special courses and clinics; in 1905, 218, and in 1906, 295. In January and February of this year 55 men registered from various parts of the United States, as follows: New York, 9; Ohio, 7; California, 8; Pennsylvania, 6; Illinois, 6; Washington, 2; Nebraska, 1; Oregon, 2; Texas, 1; Connecticut, 2; Iowa, 1; Tennessee, 1; Montana, 1; Michigan, 2; Maryland, 1; Kentucky, 2; Virginia, 1; New Hampshire, 1; Massachusetts, 1.

## CANADA.

**University News.**—The chair of medicine and clinical medicine in McGill University, Montreal, which was left vacant by the recent death of Dr. James Stewart, has been filled by the appointment of Dr. Frederick G. Finley for the didactic work, and of Dr. Henri A. Lafluer and Charles F. Martin to have joint charge of the clinical work.

**Medical Inspection Stopped.**—The medical inspection of schools in Montreal has been stopped for the present, owing to lack of sufficient funds to pay the 40 medical inspectors. Since the inspection began, six months ago, there is said to have been 70 per cent. less disease and uncleanliness in the schools of Montreal than formerly.

**Militia Medical Officers Appointed.**—The following senior medical officers have recently been appointed in the Canadian militia: Eastern Ontario, Drs. William A. Willoughby, Colborne; Richard W. Garrett, Kingston, and J. A. McCammon; Quebec command, Drs. Henri Trudel, St. Gregorie; J. P. Lord, Joseph E. Grondin, Charlesbourg; Ernest R. Brown, Montreal, and P. Ostigny.

**Ministry of Health.**—Dr. Domingo Orvananos, Mexico City, president of the American Public Health Association, has appointed the following as a special committee to further the establishment of a ministry of health in Canada: Dr. Robert M. Simpson, chairman of the Winnipeg Board of Health; Dr. P. H. Bryce, chief medical officer of the Department of the Interior, Ottawa, and Dr. F. Montizambert, director-general of public health for Canada.

**Hospital News.**—An addition is to be erected to the Stratford (Ont.) General Hospital at a cost of $20,000. It will provide for children's wards, maternity wards and operating room.—— Nurses' homes are to be erected in connection with the Western Hospital, Montreal, and the Royal Victoria Jubilee Hospital, Victoria, B. C.—The Toronto Provincial Hospital for the Insane, following the appointment of a resident pathologist, has commenced the publication of a regular monthly bulletin on psychiatry. This marks a distinct advance in the study of psychiatry in Ontario. The first volume is largely devoted to methods of examination and to paranoia.——The thirty-fifth annual report of the British Columbia Provincial Hospital for the Insane shows that 150 patients were admitted to that institution during 1906, being 27 more than the previous year. Of this number 108 were males and 42 females. During the year 79 patients were discharged, the largest number in a single year.

## FOREIGN.

**Flowers and Plants for Berlin Hospitals.**—A flower show was held at Berlin in March to raise funds to keep the public hospitals constantly supplied with cut flowers and plants.

**Metric System Rejected by Great Britain.**—The British Parliament has rejected, by a vote of 150 to 118, a proposal to make the metric system standard in the United Kingdom.

**German Medical School Founded in China.**—Shanghai is to have a German medical school, and Claude du Bois-Reymond of Berlin has been appointed professor. He is the son of the famous physiologist and has devoted himself mostly to ophthalmology.

**Recipients of Salomonsohn Prize.**—From the endowment for promotion of scientific research, known as the Salomonsohn foundation, sums have been given recently to Madam Rabino-

witsch-Kempner of Berlin, Rosenfeld of Breslau and Zoeppritz of Göttingen, about $500 being divided between them.

**Free Tuberculosis Dispensary in Constantinople.**—An anti-tuberculosis league in Constantinople will open a free dispensary where people, irrespective of creed and nationality, may receive treatment for tuberculosis or any other disease of the respiratory organs. It will be conducted as are similar institutions in western Europe.

**Typhoid Fever in Turkey.**—The *Lancet* states that there is much typhoid fever in several suburbs of Constantinople. In Haskeuy, on the left bank of the Golden Horn, more than 90 cases have been reported in a comparatively short space of time. The sanitary authorities are alarmed and the prefect of the city has ordered that all the drains and fountains should be examined and necessary repairs made.

**Transactions of the International Cancer Conference.**—A special number of the *Zeitschrift f. Krebforschung* is devoted to the transactions of the international conference of workers in cancer research which was held at Heidelberg last September. The journal in question is issued by D. v. Hansemann and G. Meyer as the official organ of the German cancer research committee, which has its central office in Berlin, Bendlerstrasse 13.

**Extensive Bovine Vaccination in Argentina.**—P. Römer of Marburg leaves at once for Buenos Ayres to apply von Behring's method of vaccination of cattle against tuberculosis on an extensive scale on request of the Argentine government. Römer has been at the head of one department of von Behring's Institute for Hygiene and Experimental Therapy, and the German government conferred the honorary title of professor on him as he left for South America.

**Ernst Haeckel's Fiftieth Professional Anniversary.**—On the occasion of the fiftieth anniversary of his graduation in medicine, Prof. Ernst Haeckel of Jena was made a privy medical councilor with the title of *Excellenz*. He practiced medicine for a time in Berlin, but then turned his attention entirely to the natural sciences and made his name famous with his researches and publications on comparative embryology, anatomy and physiology. He is now in his seventy-third year and said to be in the best of health.

**Resignation of Hospital Medical Staff at Cracow.**—A Vienna exchange states that the physicians connected with the public hospital at Cracow recently petitioned the authorities for increased remuneration. Their request was denied and they have unanimously decided to resign their positions on April 1, their resignations to take effect in two weeks. Steps are being taken to insure that their action will be sustained by physicians generally throughout Austrian Poland, so that no physician will accept a position in the hospital under present conditions.

**Recipients of Tiedemann Prize.**—This prize is awarded every fourth year by the Senckenberg Society at Frankfurt a. M. to the German writer who has produced the best work along the lines of comparative anatomy and physiology. It was awarded this year to E. Buchner of Berlin for his research which has demonstrated that the process of fermentation is not due to the action of living organisms, but is a physical contact action. The previous recipients of the prize have been Koch, Ehrlich, Bütschli, E. Fischer, von Behring, A. Kossel and F. Schaudinn.

**A New Maternity for Constantinople.**—The Italian Hospital of Constantinople, according to the *Lancet*, has opened a maternity section for the poorer classes of the population, under the charge of Dr. Stavridis. Three days a week there are free consultations. If a woman desires to enter the hospital she must write her name in the register kept at the hospital for that purpose and occupy the bed assigned to her. If a woman desires to be delivered in her own home she will be furnished information and assistance. The rooms in the maternity are equipped with every modern appliance, and the institution should prove a boon to indigent mothers.

**Death of Berthelot, Founder of Organic Synthesis.**—The death is reported from Paris of another great chemist, Prof. M. P. E. Berthelot, at the age of 80, to whom is ascribed the honor of laying the foundations for organic synthesis and for thermo-chemistry. Besides his important pioneer work in these lines, he published many articles on other phases of chemical research, fully 600 works issuing from his pen. The list includes a number of historical treatises on chemistry and alchemy, the results of study of papyri and of Greek, Arabian and Syrian records. He took an active part in public life, serving as minister of foreign affairs and as senator, and his long life was crowned with honors, although he never sought to make a pecuniary profit out of any of his important scientific discoveries from which others are still reaping such harvests.

**Blackwater Fever in Bengal and Assam.**—Blackwater fever is reported to be more virulent than ever in Jalpaiguri and the tea planters have appealed to the lieutenant-governor of Eastern Bengal and Assam for help. During 1906, 13 young Europeans out of a population of 200 died from this disease, and the survivors are beginning to ask themselves if the worldly prospects are such as to justify them in running so serious a risk to life by remaining there. According to the *British Medical Journal*, the mortality is not confined to Europeans; that of the coolies and of all whose work lies in the Duars is appalling, and it is hoped that the government will appoint a commission to investigate the matter. In spite of all that has been done on the subject, it is felt that the knowledge of blackwater fever is in an unsatisfactory condition and it appears that in Jalpaiguri the conditions for studying the subject are favorable. There are physicians on the spot who have intimate knowledge of the clinical features of the disease and of the local conditions and who will gladly place these valuable assets at the disposal of any commission which the government may appoint. The planters have promised a considerable sum toward the expense of an investigation; and as the existence of an important industry is at stake the government can hardly fail to help in the matter.

**Congresses in Europe This Year.**—The International Congress for Psychiatry, Neurology, Psychology and the Care of the Insane will be held at Amsterdam, September 2 to 7.——It will be followed a week later by the first congress of German neurologists, which meets at Dresden. At the latter the main addresses are to be on various phases of the surgical treatment of nervous affections, delivered by Krause, Bruns, Neisser and Müller.——The congress of French-speaking neurologists and alienists is to be held in Switzerland in August, Prévost of Geneva to preside. Professor Berdez of Lausanne is the secretary. The subjects to be discussed are hysteria, periodical neuroses, medicolegal testimony and responsibility.——The Seventy-ninth Congress of German Physicians and Scientists—the *Naturforscher* congress—opens at Dresden September 15 and closes the day before the congress of hygiene at Berlin.——The Second International Physiotherapy Congress will convene at Rome in October. The Italian congresses also meet in October, as a rule, and the French surgical congress at Paris.——The Seventh International Physiology Congress will meet at Heidelberg, August 13-16, and the International Anti-tuberculosis Conference at Vienna, September 19-21, followed October 2-5 by the first annual congress of German-speaking urologists.——The Twelfth German Gynecologic Congess will be held at Dresden, May 21-25. Leopold will preside; Weindler of Dresden is the secretary. The principal subjects are pelvis-enlarging operations, and asepsis in gynecologic operations.——Elaborate preparations have been made for the Fourteenth International Congress of Hygiene and Demography at Berlin, September 23-27. The chief of the imperial board of health, Professor Bumm, will preside. Further particulars can be obtained from the secretary, Dr. Nietner, Eichhornstrasse 9, Berlin W. 9.

## LONDON LETTER.

*(From Our Regular Correspondent.)*

LONDON, March 16, 1907.

### A Central Emergency Fund for Maintaining the Interests of the Profession.

As the British Medical Association is constituted as a "limited liability company" not formed for profit, no part of its funds can legally be used for the benefit of any individual member except by way of remuneration for services rendered to the association. This has prevented the giving of financial assistance to its members engaged in disputes with organized bodies in the matter of contract practice. The council, therefore, has instituted for this purpose the central emergency fund, which is maintained by voluntary subscriptions. All members of the profession are invited to contribute. Any contribution may be marked for use in specified disputes, or for application to special methods of carrying out the objects of the fund. The fund will be under the control of the medico-political committee of the association.

### Lord Lister's Eightieth Birthday.

Lord Lister's eightieth birthday falls on April 4, 1907. A movement has been started to convey to him the admiration which is felt for his work. Dr. C. J. Martin, director of the Lister Institute, has suggested that the best form which this expression could take would be the publication of all his scientific papers prefaced by a biography containing an account of his discovery of the antiseptic system.

### London Ambulance Commission.

The first meeting of the London Ambulance Commission was held February 14. An experimental motor car, at a cost of $2,500, has been made and a station will probably be built near St. Bartholomew's Hospital. This ambulance is equipped with every latest portable appliance for surgery, together with a full stock of medicines, lotions and bandages. A surgeon will accompany the ambulance. It seems strange that the largest and richest city of the world should have only just awakened to the fact that her ambulance arrangements are many years behind the times. Hand ambulances and stretchers are still in vogue in London, but a beginning has been made, and this state of affairs will soon be changed.

LONDON, March 22, 1907.

### The Royal Commission on Tuberculosis.

An important report on the histologic and bacteriologic investigations carried on by Dr. Eastwood in connection with the Royal Commission on Tuberculosis has just been issued. It emphasizes the findings previously referred to in THE JOURNAL—that bovine tuberculosis is transferable to man. But Dr. Eastwood adds the interesting statement that: "The evidence before him confirms the view that some viruses of human origin are relatively innocuous to bovines." Bacilli of bovine origin produce in bovines lesions of a highly acute type. Some virsues of human origin produced similar results, while others produced only a mild type of disease. In the anthropoid ape the human viruses, which were relatively innocuous to bovines, produced typical tuberculous lesions, similar to those produced by bovine bacilli. Even in small doses bovine bacilli produced typical tuberculosis. Dr. Eastwood concludes that his investigations have failed to give the slightest indication that there is any peculiarity about bovine viruses which might suggest that compared with other viruses they are relatively innocuous to man.

### Death of a Surgeon from an Accident During an Operation.

While operating for appendicitis, Dr. Lowson of Hull pricked his finger in November, 1906. For sev ral weeks he lay seriously ill with septic cellulitis. After a few weeks' vacation he returned to work, but in impaired health. Toward the end of January he was taken ill with pleurisy, which terminated in empyema. He came to London, where his chest was opened and drained, but his reserve strength was reduced so low that he lingered for a few weeks and died March 15, at the age of 56. Many years ago he also suffered in the discharge of his duty. He contracted diphtheria from sucking a blocked tracheotomy tube and saved the patient's life, for which he was awarded the Albert medal. The result of that accident was to render him unfit for work for a year. His reputation as an operator was considerable. He appears to have been the first to perform the operation of pneumonectomy. In cases of early phthisis he removed the affected portion of lung with success.

### The Society of Tropical Medicine and Hygiene.

A society of this name has been founded. The determination to found it was formed two months ago at a meeting held at the Colonial Office on the suggestion of Mr. James Cantlie. Sir Patrick Manson presided, and a subcommittee was formed to make the necessary arrangements, consisting of the chairman, Col. Melville, Dr. Sandwith, Dr. Carnegie Brown, Prof. Ronald Ross, Dr. G. C. Low and Mr. Cantlie. To these were added the following in order to constitute a general committee: Professor Nuttall (Cambridge), Dr. W. Hartigan, Lieutenant-Colonel Giles, Dr. Sambon. The promoters hope that the society will become universal, and embrace every man and woman interested in tropical medicine. Nine-tenths of the members will probably live abroad, and the object will be to provide mutual instruction and support for all.

### The Epidemic of Cerebrospinal Fever.

Cases of cerebrospinal fever continue to be reported from London and various parts of the country, but epidemic prevalence is still confined to Glasgow and Belfast. In Glasgow, on March 15, 112 cases were under observation, as compared with 101 on March 8. On March 19 the health officers issued a statement that during the past two weeks there had been 93 cases and 55 deaths, as compared with 90 cases and 60 deaths in the preceding fortnight. During February, 140 deaths occurred in the eight principal towns of Scotland, being 66 more than in January. In Belfast, 185 cases have been reported up to the present and 104 deaths. In Dublin, 15 cases and 11 deaths have occurred, but no new case has been reported since March 6.

### The Eighth International Conference of Red Cross Societies.

The Eighth International Conference of Red Cross Societies will be held in London June 10-15. It is believed that the foreign guests will number 200—from all the European states, America, Japan, etc. They will probably be received by King Edward. Social entertainments are being organized by the Marchioness of Salisbury, Lord Rothschild and others.

### "Thickening" in Cream.

Dr. Collingridge, health officer of the city of London, refers in his monthly report to the pernicious practice of adding starch to cream. There is no legal definition of cream, and the fat present in various samples varies from 15 to 55 per cent. The public forms its opinion of the value of cream by the only standard available—its thickness. The addition of starch or gelatin gives a fictitious appearance of thickness. A very small addition of thickening material will compensate for the absence of a large amount of fat and allow an inferior article to be sold as cream. A departmental committee in 1901 reported that the artificial thickening of cream by the addition of gelatin or other substance should raise a presumption that the cream is not genuine. The sale of foods and drugs act of 1875 makes it an offense to sell any article of food to which any matter or ingredient not injurious to health has been added fraudulently to increase the bulk, weight or measure, or to conceal the quality.

## VIENNA LETTER.

*(From Our Regular Correspondent.)*

VIENNA, March 19, 1907.

### Professional Secrecy and the Present Law.

In a lecture delivered before the medicolegal society, Dr. Kienböck illustrated the false position in which the practitioner is placed by the law. Thus, the medical attendant is bound not to disclose the nature of the illness of his patient nor to give any particulars in regard to the condition of any one applying to him for professional help, while, on the other hand, the practitioner must inform the officers of an insurance company or of other corporations, who engage his services, of the health of certain individuals, thus violating the law. Furthermore, practitioners are bound to inform the police of every case of injury or suspicious disease, and to inform the magistrates of cases of infectious disease. Each one of these breaches of professional secrecy is, strictly speaking, amenable and involves danger to the doctor. On the other hand, the persons auxiliary to the doctor—nurses, servants, not qualified assistants—are not bound by law to keep the secrets of which they may obtain knowledge during their function in the service of the doctor. In cases of suits for fees, the doctor is not allowed to disclose to the court the nature of the disease of the patient, although such a disclosure might mean for him a very substantial help in the litigation. Kienböck also spoke of the painful position of the practitioner, who by his office learns of dangerous conditions of his patients, as, for instance, in cases of syphilis or tuberculosis of a bride or bridegroom, or of the deafness or blindness of a railroad employé, or of the mental condition of a business man suffering from cerebral paralysis. The lecturer demanded the adoption of a wider view of modern ethics in legislation and the addition of necessary provisions to the law now in force.

### Jubilee of the Vienna "Operateur-Institut."

The "surgeon's school," or "Operateur-Institut," of Vienna recently celebrated its centennial anniversary. It was founded by Emperor Francis I, who, acting on the suggestion of the then famous professor of surgery, Dr. V. v. Kern, ordered him to teach several well-qualified surgeons in a special way, and he, the emperor, would defray the expenses. This institution was then incorporated in the University of Vienna, and in 1863 the two surgical clinics were ordered to take the "Operateur-Institut" over. Since then, every surgeon, who desired any special instruction in his branch, had to become a pupil of this school; admission was not easy, as a severe examination in anatomy and surgery had to be passed before obtaining permission to enter the clinic. It may be stated that every living well-qualified surgeon in Austria has been a pupil of this school. All the regular professors of surgery in the Vienna university have been directors or teachers in the institute, so that there is always first-class instruction, while the clinical material to be drawn on numbers upward of 25,000 patients for both clinics. The centennial celebration was described in these columns on page 1043.

# Pharmacology

## GUDE'S PEPTO-MANGAN.

### An Investigation Into the Reliability of an Alleged Scientific Report.

In THE JOURNAL, Sept, 23, 1905, we exposed the misuse, by the exploiters of Pepto-Mangan, of the government report on anemia in Porto Rico. The conclusion of the Government Commission, which investigated the anemia prevalent in Porto Rico, was that iron was of subsidiary importance in treatment, and that the carbonate, as represented by Blaud's pills, seemed to give the best results. Immediately Messrs. M. J. Breitenbach & Co. used this report to exploit their preparation (Pepto-Mangan)—first in advertisements and reading notices and later in a garbled extract of the report printed in pamphlet form and scattered broadcast among physicians. This pamphlet conveyed the idea that Pepto-Mangan had been endorsed by the government as superior to any other iron preparation, and that it had proved most efficacious in the treatment of anemia; that "this report alone would suffice to establish Pepto-Mangan at once as the foremost hematinic known." The Commission later published a denial, stating that Pepto-Mangan was used by them only for a little while, because it was found to be of even less value than other iron preparations.

Some months ago another pamphlet was sent out by the same company purporting to give the results of the treatment of 32 cases of "infantile anemia" at the Infants' Hospital, Randall's Island, New York City. The report was written by Mateo M. Guillen, designated as house physician and surgeon. A cursory examination of this pamphlet showed that five of the 32 cases cited had an initial blood count of over 4,500,000 erythrocytes, and one over 70 per cent. hemoglobin, with nearly 4,000,000 reds. Thus 18 per cent. of the cases cited could not be classified as anemia. Moreover, in 26 cases the anemia had followed some acute disease or the patients were convalescent from such a disease. In either case, spontaneous improvement was naturally to be expected.

#### THE UNRELIABLE REPORT.

These facts aroused suspicion and suggested further investigation. Accordingly, we had the books of the hospital inspected by a competent representative, who devoted consid-

| Case No. | Name | Age | Color | Diagnosis | Condition before Treatment | Period of Treatment | Red Cells | | | Hæmoglobin | | | White Cells | | | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1st Count | 2nd Count | 3rd Count | 1st | 2nd | 3rd | 1st Count | 2nd Count | 3rd Count | |
| I. | E. F. | 13 mos. | White | Pseudo-Leukæmia | Hopeless | 15 weeks 3 days | 2.366.000 | 3.466.666 | | 20 % | 58 % | | 16.000 | 8.000 | | Improving rapidly |
| II. | K. F. | 2 years | " | Anæmia following Acute-Ileo-Colitis | Very poor | 15 " 3 " | 2.533.333 | 4.851.851 | | 40 % | 75 % | | 10.000 | 7.133 | | Cured |
| III | J. F. | 22 mos | Colored | Anæmia following Pneumonia Marked Rickets | Fair | 15 " 2 " | 3.120.000 | 4.580.000 | | 40 % | 68 % | | 6.925 | 6.200 | | Cured |
| IV. | C. V. | 19 mos. | White | Anæmia following Pneumonia Tuberculosis | Poor | 15 " | 2.533.333 | 3.967.444 | | 40 % | 64 % | | 15.320 | 10.600 | | Improved |
| V. | H. V. | 19 mos | " | Anæmia following Measles Broncho-Pneumonia Tubercular Bronchial Glands | Fair | 15 " " | 3.132.000 | 4.530.851 | 3.012.300 | 57 % | 69 % | 40 % | 5.600 | 12.300 | 15.400 | Died |
| VI. | W. C. | 20 mos. | " | Anæmia following Whooping-Cough | Fair | 16 " | 3.200.000 | 5.122.228 | | 37 % | 64 % | | 19.000 | 12.000 | | Cured |
| VII. | C. S. | 16 years | Colored | Anæmia following Double Cervical Adenitis | Good | 10 " | 3.780.000 | 4.600.000 | | 75 % | 80 % | | 15.200 | 7.400 | | Improved |
| VIII. | R. R. | 21 mos. | White | Anæmia following Broncho-Pneumonia (Convalescent) | Poor | 14 " | 3.845.714 | 3.970.370 | | 39 % | 54 % | | 12.700 | 7.800 | | Cured |
| II. | E. F. | 29 mos | " | Anæmia following Entero-Colitis (Convalescent) | Fair | 14 " | 3.128.000 | 5.195.555 | | 47 % | 70 % | | 5.900 | 6.200 | | Cured |
| X. | D. S. | 10 years | " | Anæmia accompanying Pneumonia & Pleurisy | Fair | 13 " 5 " | 3.720.000 | 5.213.333 | | 48 % | 78 % | | 10.400 | 5.900 | | Cured |
| XI. | R. F. | 2 years | " | Anæmia following Whooping-Cough (Convalescent) | Fair | 13 " | 3.576.000 | 4.766.666 | | 45 % | 67 % | | 15.350 | 6.300 | | Cured |
| XII. | L. G. | 13 mos | " | Anæmia following Measles. Broncho Pneumonia Diphtheria (Convalescent) | Fair | 12 " | 3.780.000 | 4.249.000 | | 44 % | 58 % | | 10.000 | 8.800 | | Improved |
| XIII. | J. H. | 5 years 3 mos | " | Anæmia following Whooping Cough Necro-Pharyngeal abscess (Convalescent) Cervical Adenitis Tubercular. | Fair | 11 " | 5.400.000 | 5.277.777 | | 70 % | 65 % | | 10.000 | 12.700 | | Improvement (still progressing) |
| XIV. | W. T. | 2 years 4 mos. | " | Anæmia following Pertussis (Convalescent) | Poor | 12 " | 2.972.000 | 4.354.444 | | 43 % | 74 % | | 8.000 | 7.200 | | Cured |
| XV. | K. C. | 11 years | " | Anæmia following Entero-Colitis (Convalescent) | Good | 12 " | 4.590.666 | 6.700.000 | | 60 % | 78 % | | 9.100 | 7.200 | | Cured |
| XVI. | W. S. | 22 mos | " | Anæmia accompanying Acute Epiphysitis of Left Femur (Tubercular) | Bad | 9 " | 2.904.000 | 3.872.229 | | 40 % | 64 % | | 11.600 | 10.800 | | Improved |
| XVII. | D. S. | 3 years | " | Anæmia accompanying Hydrocephalus (Not Operative) | Good | 17 " | 5.364.562 | 3.007.602 | 3.472.222 | 82 % | 58 % | 68 % | 5.620 | 7.850 | 9.200 | Improved |
| XVIII. | W. B. | 3 years 8 mos. | " | Anæmia following Ileo-Colitis (Convalescent) | Bad | 15 " | 4.360.444 | 5.029.602 | | 48 % | 62 % | | 14.700 | 12.600 | | Cured |
| XIX. | W. B | 3 years 6 mos. | Colored | Anæmia following Enteritis (Normal) Pulmonary Tuberculosis | Hopeless | 14 " 6 " | 3.947.676 | 4.977.777 | | 42 % | 58 % | | 10.500 | 9.500 | | Cured |
| XX. | J. B. | 28 mos. | White | Anæmia accompanying Summer-Diarrhœa | Bad | 12 " | 3.280.000 | 4.313.333 | | 39 % | 60 % | | 14.800 | 10.700 | | Cured |
| XXI. | W. W. | 2 years 10 mos | " | Anæmia accompanying Summer-Diarrhœa | Hopeless | 10 " | 3.950.492 | 4.492.592 | | 48 % | 58 % | | 30.300 | 17.200 | | Cured |
| XXII. | R. S. | 7 mos | " | Anæmia following Gastro-Enteritis (Convalescent) | Hopeless | 5 " | 2.989.798 | 3.203.703 | | 38 % | 56 % | | 10.600 | 6.900 | | Cured |
| XXIII. | L. S | 26 years | " | Simple Anæmia | Fair | 21 " | 4.798.454 | 5.193.333 | | 60 % | 80 % | | 7.000 | 6.900 | | Cured |
| XXIV. | L. K. | 9 years | " | Simple Anæmia | Fair | 15 " | 4.678.594 | 5.289.989 | | 72 % | 82 % | | 7.100 | 6.400 | | Cured |
| XXV. | V. S. | 2 years | " | Anæmia accompanying Acute Gastro-Enteritis | Poor | 17 " | 3.254.698 | 4.898.564 | | 44 % | 66 % | | 11.200 | 8.400 | | Cured |
| XXVI. | T. C. | 3 years | " | Anæmia accompanying Syphilitic periostitis (Double & of tibiæ & femur) | Very poor | 12 " 3 " | 3.984.999 | 3.796.874 | 3.674.978 | 34 % | 40 % | 38 % | 14.600 | 14.000 | 16.000 | Not improved |
| XXVII. | F. B. | 3 years 6 mos | " | Anæmia accompanying Pott's disease (Psoas Abscess) | Poor | 10 " | 3.394.656 | 4.132.222 | | 36 % | 48 % | | 10.000 | 9.400 | | Improved remarkably |
| XXVIII. | F. S. | 22 years | " | Simple Anæmia | Fair | 13 " | 4.463.676 | 5.298.762 | | 66 % | 80 % | | 9.300 | 7.600 | | Cured |
| XXIX. | J. D. | 4 years | " | Anæmia accompanying Pott's Disease | Poor | 15 " | 3.979.888 | 4.898.788 | | 66 % | 76 % | | 9.000 | 7.800 | | Improved remarkably |
| XXX. | M. S. | 10 years | " | Anæmia accompanying Sarcoma of scapula | Hopeless | 18 " | 2.875.555 | 2.974.000 | | 34 % | 32 % | | 16.000 | 17.500 | | Died |
| XXXI. | L. G. | 7 years 4 mos | " | Simple Anæmia | Fair | 3 " | 3.936.666 | 4.897.000 | | 66 % | 78 % | | 7.200 | 6.800 | | Cured |
| XXXII. | N. F. | 5 years 6 mos. | " | Simple Anæmia | Poor | 12 " | 4.234.666 | 5.453.333 | | 66 % | 78 % | | 7.200 | 6.100 | | Cured |

The above table is reproduced from a sheet 11 by 14½ inches, which is a part of the pamphlet. On the top of the sheet is the following in display heading: "Comparative table of 32 cases of Infantile Anemia treated at the City Infants' Hospital, Randall's Island, New York City, during a period of four months with Gude's Pepto-Mangan. By Dr. Mateo M. Guillen, House Physician and Surgeon."

erable time to a careful examination of the original records of the hospital. His report follows:

"In reply to your request that I examine into the authenticity of the cases advertised as having been treated with Pepto-Mangan at the City Hospital, Randall's Island, I am able to make the following report, after a thorough examination of the records of the hospital in the clerk's office, the daily charts and the physicians' order books.

"Dr. Mateo M. Guillen, house physician in 1902, whose name is attached to the report as having treated the cases with Pepto-Mangan, has been in South America since that time. Through the kindness of Dr. William L. Stowell, visiting physician at the Infants' Hospital, I was furnished with the full names and data of the patients whose cases are reported, so I was able to get the correct histories of them in the hospital records. Dr. Stowell informed me that he was aware that *some* of the patients had received Pepto-Mangan simply as one form of iron, though he believed the simpler forms of iron preferable, and that if I would trace the treatment in the cases I would doubtless find the simpler forms of iron prescribed.

"Examination of the hospital records and daily charts of the cases show remarkable discrepancies from the results and treatment as advertised in the Pepto-Mangan pamphlet. Some of the most striking are the following:

"Three patients, reported in the pamphlet as *cured* through the use of Pepto-Mangan, the hospital records show *died*, viz.:

"Case II, K. T. (Katie Turner).

"Case XIX, W. B. (William Barkdale).

"Case XXII, R. S. (Reuben Schehr).

"The results in all the cases are advertised as being obtained by Pepto-Mangan. On the contrary, the daily charts and the doctor's order books show that some of the patients *never* received Pepto-Mangan. For instance, in Case XII, L. C. (Lillian Codney), instead of Pepto-Mangan, was given *syrupus ferri iodidi*, and at other times maltzyme and liquid peptonoids and various local, external and symptomatic medicines, but at no time was Pepto-Mangan prescribed.

"Similarly, in Case XIII, I. H. (Irene Harowitz) was never given Pepto-Mangan.

"The charts of Case IV, C. V. (Catherine Vaugh) show that Pepto-Mangan was only prescribed once, and at other times she was given *syrupus ferri iodidi*.

"Similarly, the charts of Case V, H. V. (Helen Vaugh) show that Pepto-Mangan was only prescribed once, and at other times was given *syrupus ferri iodidi*.

"In Case XVIII, W. B. (William Born) was given Pepto-Mangan on July 19, but it was discontinued on August 13, although the pamphlet states that he was under treatment fifteen weeks.

"In Case X, D. S. (David Smulewitz) was given syrup of hypophosphites and cod-liver oil along with the Pepto-Mangan.

"I was informed by Dr. Oberdorfer, who was on the hospital staff at the same time, that in Case I, E. P. (Eva Pases), though Pepto-Mangan was given, arsenic was pushed in *very large doses*.

"Of the thirty-two cases reported in the Pepto-Mangan pamphlet, only twenty-two were reported by Dr. Stowell, and among the history charts for that period I was unable to find any cases corresponding to the initials of the additional ten cases.

"I hereby swear that the above statements are correct data taken from the records of the City Infants' Hospital, Randall's Island, and am able at any time to prove them by the mentioned records.

"GEORGE M. GELSER."

[Mr. Gelser is a senior student in the medical department of Cornell University.]

SUMMARY.

This throws a somewhat different light on the impressive report of thirty-two cases. Analysing the results obtained, we find that 13 cases, namely, Cases VII, XV, XXI, and all of the cases from XXIII to XXXII were not found on the hospital records. The table in the pamphlet shows that the patient in Case V died. The hospital records show that Patients II, XIX and XXII, which were reported as cured, also died. The records also show that in Cases XII and XIII Pepto-Mangan was never given; that in Cases IV and V but a single dose was given; that in Cases I and X this preparation was given in conjunction with other preparations, such as syrup of hypophosphites and iron, cod-liver oil, etc., which can certainly claim a share in the results. In Case XVIII, in which the report says Pepto-Mangan was given for fifteen weeks, the records show that it was given but three weeks and a half. Cases XIII, XV and XVII are not cases of anemia at all. Striking these from the table, we have left eight cases entered on the hospital records, in which there is evidence that Gude's Pepto-Mangan was administered. But the table itself shows that seven of them, namely, Cases III, VI, VIII, IX, XI, XIV and XX, were entered as convalescent at the time of beginning treatment, the anemia following some acute disease, such as pneumonia, whooping-cough, bronchopneumonia, enterocolitis and summer diarrhea. In all of these cases, anemia is to be expected during the height of the disease, and rapid recovery from the anemia, as soon as convalescence is established, would also be observed in 95 per cent. of all cases which received ordinary care and nourishment, regardless of medication. The imposing and delusive chart which has, on first sight, such an ultra-scientific appearance, melts down under impartial investigation to a single case which is in any sense worthy of consideration. Case XVI is reported as that of a child, 22 months old, suffering from anemia, accompanying acute tubercular epiphysitis. In this case, Pepto-Mangan was given for nine weeks. An increase of red blood corpuscles from 2,904,000 to 3,872,222, and an increase of hemoglobin from 40 to 64 per cent. took place in the same period. Even the sanguine and optimistic author of the pamphlet and the compiler of the chart does not venture to record this case as anything more than improved.

PREVALENT DISREGARD OF TRUTH.

Two things may be learned from this interesting analysis. The first is that so-called scientific reports are only of value in proportion to the veracity and reliability of the writer. Unless the statements of the author are founded on scientifically established facts, they are delusive and as dangerous as the false lights of a shipwrecker or the decoy signals of a train robber. It seems incredible that any physician having the slightest conception of the dignity and honor of the profession would deliberately falsify and distort hospital records for the sake of the pittance offered by proprietary houses, whose preparations he lauds, or for the sake of the cheap notoriety which he obtains while lending his name to such a deception.

The second and equally deplorable fact is that firms composed of men who are personally honorable seek to obtain business by means of such unjustifiable methods. It might be said in defense that the M. J. Breitenbach Company did not investigate the statements set forth in the pamphlet, and that it relied on the truthfulness of the writer. This does not relieve the firm of its responsibility.

There is an apparent tendency on the part of proprietary houses to accept any report, statement or testimonial, no matter how obviously absurd, distorted or highly colored—if only it be favorable to their preparations—and to eliminate and to suppress any unfavorable reports or facts. This tendency has helped to produce the present deplorable conditions in the proprietary medicine business. Such methods are not scientific; they are not even in accord with the ordinary principles of business honesty, which are supposed to obtain among reputable merchants. An honorable and legitimate business should have a better foundation than advertising matter which will not stand investigation.

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## Lactopeptine Exposed Thirty Years Ago.

SOUTH BEND, IND., March 23, 1907.

*To the Editor:*—The report on Lactopeptine in THE JOURNAL of March 23 is very interesting and it is hoped that it will prove equally instructive to your readers. While it is interesting to us pharmacists, I can not say it is especially instructive, for the facts contained therein have been surmised if not actually known to pharmacists for many years. The surprising thing, however, is that the members of the medical profession should go along blindly prescribing such preparations year after year, often against our protest, as was more espe-

cially the case with the acetanilid mixtures. For years the pharmaceutical journals had pointed out the deception concerned in the exploitation of the medical profession (and eventually of the public) by nostrums of this character without avail, until the Council, through THE JOURNAL, began some two years ago, to show up the true character of these nostrums. Lactopeptine and especially its elixir have been used in enormous quantities by the medical profession, although in 1876, soon after its introduction, Prof. Emil Scheffer of Louisville, Ky., contributed a paper to the American Pharmaceutical Association, in which he reported some experiments he made on Lactopeptine, and proved that it had no greater digestive value than the saccharated pepsin then in vogue. This paper appeared in the Transactions of the American Pharmaceutical Association for 1876. Although Scheffer was an authority on the subject, he being the author of the first process for obtaining pepsin in a pure state, it is not apparent that any attention was paid to this article by the medical profession; in fact, it was entirely ignored by medical journals, and extensive advertising soon made Lactopeptine the most extensively employed proprietary article. This leads to the observation how helpless we pharmacists have been in the past because of the lack of cooperation of the medical profession. We have had to supply such articles as were in demand, and when such articles as the Compound Powder of Acetanilid and the Compound Powder of Pepsin and its elixir in the Pharmacopeia and National Formulary are criticised, such criticism should be directed against the members of the medical profession because of their lack of interest and cooperation in the preparation of these standard works. Now that their attention has been so forcibly directed to this anomalous condition, it is hoped that physicians will participate actively in the revision of these joint authoritative standards.

LEO ELIEL,
President, American Pharmaceutical Association.

## Book Notices

A TREATISE ON THE MOTOR APPARATUS OF THE EYES, Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment with the Anatomy and Physiology of the Muscles and Their Accessories. By G. T. Stevens, M.D., Ph.D. Illustrated with 184 engravings, some in colors. Cloth. Pp. 496. Price, $4.50 net. Philadelphia: F. A. Davis & Co., 1906.

This book is offered as a sequel to the author's work on "Functional Nervous Diseases," the preface stating that "difficulties of adjustments of the eyes are a source of nervous trouble, and more frequently than other conditions constitute a neuropathic tendency." The subject is very fully covered, beginning with a short historical sketch dealing with the time when actual strabismus only was recognized, and including our present recognition of heterophoria. The comparative anatomy of the eye-muscles of fishes, birds, reptiles and mammals is considered in the chapter devoted to anatomy. This chapter is particularly exhaustive and is divided into ten sections, which deal with the movements and positions of the eyes, with comparative anatomy, with the orbital measurements, planes, axes, etc., with the eye-muscles themselves, and with the insertions of the tendons, etc., covering the anatomy of the orbital aponeuroses, capsule of Tenon, vessels and nerves. Under physiology is discussed the subject of binocular vision, with the various methods of detecting and encouraging its development. The remainder of the book is devoted to the study of the anomalous conditions of the motor apparatus of the eyes, consistent and inconsistent with the physiologic state. The illustrations are modest in character and number as compared with the average book of to-day. As a whole, it offers a fair résumé of the important advances made by its author in muscle-work during the past ten years, but neglects those ideas advanced by others.

WOMAN IN GIRLHOOD, WIFEHOOD, MOTHERHOOD. A Guide in the Maintenance of Her Own Health and that of Her Children. By M. Solis-Cohen, A.B., M.D., Instructor in Physical Diagnosis, University of Pennsylvania. Illustrated with Color Plates, Scientific Drawings and Half-tone Engravings, with Manikin Chart, printed in colors, with an index. Cloth. Pp. 469. Price, $2.00 net. Philadelphia: The John C. Winston Company.

As a book for the wife and mother and a guide to such domestic medicine as is really desirable, this work meets all requirements of clearness, simplicity of language, accuracy of statement, and temperate, judicious treatment of delicate subjects. While it gives helpful suggestions as to the preservation of health and as to action in emergencies, it discourages self-medication and especially the resort to "patent medicines." The work consists of three sections, general hygiene, and the rules for care of the body applying especially to women. The hygiene of the pregnant woman and the care of mother and child during confinement, and the hygienic care of children. The popular aim of the book requires the introduction of many topics which are only indirectly of medical interest, but these parts appear to have been written with judgment and care. Many illustrations are introduced, both of medical and artistic merit. The work appears to be one that the physician can cordially recommend to his patients, and deserves a place in every home.

PREVALENT DISEASES OF THE EYE, A Reference Handbook, especially Adapted to the Needs of the General Practitioner and the Medical Student. By S. Theobald, M.D., Clinical Professor of Ophthalmology and Otology in the Johns Hopkins University, etc. Cloth. Pp. 551. Price, $4.50 net. Philadelphia: W. B. Saunders Company, 1906.

This is the most comprehensive work yet written for the special benefit of the general practitioner. The book begins with a very complete synopsis of contents, a distinct advantage to the busy man who, by its aid may read just what he needs with little expenditure of time. The question of diagnosis is given greatest space and prominence, as it should be. The family physician sees the eye cases first, and a knowledge of the more important diseases is essential to him in order that he may treat the simpler cases and send the severe ones to an ophthalmologist without delay. The line is definitely drawn, however, between those cases which can be cared for by the family physician and those requiring the services of a specialist, and the proper warning sounded. The more technical divisions of ophthalmology, such as the use of the ophthalmoscope, muscular anomalies, etc., are merely mentioned, as they require thorough study and preparation to be of definite value. The dominant note of the book is the completeness with which diagnostic methods are set forth in a style very clear and readable.

MODERN SURGICAL TECHNIC IN ITS RELATIONS AND WOUND TREATMENT. By C. Y. Pearson, M.D., M.C., F.R.C.S., Professor of Surgery, Queen's College, Cork. Illustrated, with Two Colored and Other Plates. Cloth. Pp. 392. Price, $3.50 net. New York: William Wood & Co.

The author has compiled in this work the subject-matter of a series of lectures on the technical details of modern surgery. It is designed to meet the requirements of the students and assistants in surgery who are not familiar with the science of bacteriology and the prevention of wound infections. Its chapters are devoted to a clear and concise discussion of surgical bacteriology and infections. The mode of wound infection, the consequence of such infection and the various methods employed in the prevention of infections are treated in a consecutive and exhaustive manner. A chapter devoted to the preparation of ligature and suture material is especially complete and comprehensive. Some attention is given to operative technic, including a discussion of surgical needles and their uses, together with a description of the various kinds of sutures.

TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College, Philadelphia. Second Edition. Revised and Enlarged, with 131 Engravings. Cloth. Pp. 1132. Price, $5.00 net. Philadelphia: Lea Bros. & Co., 1907.

That this work has met the needs of practical medical men as well as students is sufficiently evidenced by the fact that a new edition has been called for in two years since the first appearance of the work. The book has been thoroughly revised, the latest views that have been accepted as scientifically and clinically correct having been embodied, while statements not yet established as facts have been excluded. The treatment of the subject, as in the first edition, is eminently clear, concise and practical. The book is well illustrated.

GENITO-URINARY DISEASES AND SYPHILIS. By H. H. Morton, M.D., Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital, Genito-Urinary Surgeon to the Long Island and Kings County Hospitals and the Polhemus Memorial Clinic. Illustrated with 158 half-tones and photo-engravings, and 7 full-page color-plate. Second edition, revised and enlarged. Cloth. Pp. 500. Price, $4.00 net. Philadelphia: F. A. Davis Company, 1906.

This work is admirably written, well arranged and well printed, and the author's ideas, which are those of the German school, are clearly set forth. The subject of gonorrhea is well covered, and the treatment of acute and chronic urethritis is explicitly dealt with. Recapitulations, which are frequent, could well have been sacrificed to the elaborations of the more important subjects. The author's advice in case one fails to find the urethra in doing an external urethrotomy without a guide, to blindly puncture with Guiteras' trocar in order to reach the limit of the canal behind the stricture, must surely be condemned as unwise, as the results might be unsatisfactory, not to say disastrous, if such procedure were followed by others than the expert operator. Neither can we agree with the statement that it is necessary to produce ptyalism in order to cure syphilis, nor with the advice to curette the floor of a gummatous ulcer. Rather striking is the omission of some of the generally accepted remedies, viz.: Nitrate of silver and chromic acid solutions, often used as applications to mucous patches.

PRACTICE OF OBSTETRICS, Designed for the Use of Students and Practitioners of Medicine. By J. C. Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College, Third edition, revised. Cloth. Pp. 1071. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

The same classification has been followed in this as in the previous editions. The size of the book has been reduced 100 pages, but 140 new illustrations have been added. The following subjects have been rewritten: Development of embryo, fetus, fetal membranes and fetal structures, chorioepithelioma malignum, treatment of placenta prævia, toxemia of pregnancy, etiology of eclampsia, ectopic gestation, treatment of pelvic deformity, morbidity of the puerperium, indications for the induction of abortion and premature labor, use of forceps, Cesarean section, vaginal Cesarean section, Porro operation, and complete and incomplete hysterectomy. New subjects added are: Appendicitis complicating pregnancy, tapeworm in pregnancy, fibroma molluscum gravidarum (illustration), hematoma of the vulva (illustration), lactation atrophy of the uterus and breasts, brachial birth paralysis, vaginal incision and drainage (illustration), new history charts for institution work. The illustrations are good and the schematic drawings which accompany many of them add greatly to their value.

A MANUAL OF NORMAL HISTOLOGY AND ORGANOGRAPHY. By Charles Hill, Ph.D., M.D. Illustrated. Flexible Leather. Pp. 463. Price, $2.00 net. Philadelphia: W. B. Saunders Company, 1906.

This manual presents the fundamentals of histology in a clear-cut manner, but the evident intention of the author is that this book should be used as an aid in laboratory work and to prepare the student for more thorough study in the class room rather than as a text-book. The arrangement of subjects is excellent, the central idea being to lead the student up gradually from the simple to the complex. Considerable space is devoted to the mouth, especially the teeth, thus making the book a valuable one for students of dentistry. The illustrations are numerous and well made. The book is to be commended.

OBSTETRICS. Edited by J. B. De Lee, A.M., M.D., Professor of Obstetrics Northwestern University Medical School, with the Collaboration of D. Roehler, M.D., and H. M. Stowe, M.D. Vol. 5 of the Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post Graduate Medical School. Series 1906. Cloth. Pp. 256. Chicago: The Year Book Publishers, 1906.

This book reviews the progress in obstetrics during the past year. Little advance has been made in the scientific fields of obstetric research. Under "Eclampsia" are considered the biologic theories of the origin of this condition, and attention is directed to Zweifel's announcement that lacticaciduria is an important etiologic factor. The work as a whole, however, deals with the practical side of obstetrics.

# *Medical Economics*

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

## Suggestions for Authors.

In the midst of his exile for research on syphilis in monkeys in Java, Neisser has found time to voice his exasperation at certain habits of medical authors and to beg them to refrain. He has written an open letter on the subject which he sent simultaneously to the principal medical journals of Germany, and which appeared in most of them about March 12. It is noteworthy that Neisser does not write from the standpoint of an editor, but merely from that of an earnest seeker for what is really important in current medical literature.

He appeals to medical writers to make the titles of their articles more concrete and thus give readers an idea as to the writer's views on the subject discussed. "For instance," he says, "instead of the title, 'Calomel Salve in Prevention of Syphilis,' write, 'Efficacy' or 'Non-efficacy of Calomel Salve,' etc.; instead of 'Administration of Mercury by the Rectum,' write, 'Inefficacy of Rectal Mercurial Treatment;' instead of 'A New Remedy for Gonorrhea,' why not name the remedy and state at the same time whether the writer's experience with it has been favorable or the reverse." "The worst of all titles," he adds, "are those such as 'Therapeutic Notes,' 'Clinical Experiences,' and the titles in which an affection is called by a new name without reference to the name under which it has previously been recorded." He cites as an example of the latter "Tuberculosis cutis pruriginosa," remarking how much better it would have been to have written, "Tuberculosis cutis pruriginosa, the so-called Urticaria perstans." "One glance at the title would have then informed the reader—and likewise the larger multitude of non-readers—exactly what the author was aiming at. Even those most interested in a subject are unable to read all the periodicals, the archives and journals, weeklies and monthlies, centralblatts and year books, all the time, but when they have occasion to read up on any special subject they are grateful, indeed, to those who make their sifting of the literature as easy as possible for them. The best way to do this is to make the titles of the articles a reflection in condensed form of their actual concrete contents, not a vague generalization." The titles need not be any longer, as a rule. He commends heartily the habit of appending a good summary of the article, adding that if authors omit this they can not complain if their communications fail to attract the attention they deserve.

He also expresses dissatisfaction with the articles printed without paragraphs or headlines. This he finds very often in English works, and he says that it makes the reading of the articles very difficult for him, adding that frequent paragraphs, numbering or lettering the different parts of the article, and the occasional use of black letter type would make it much easier to read the article and to discern the drift of the author's ideas, even when hastily scanning the article. Those works will be read the most eagerly and the most frequently which realize some of the above suggestions.

In conclusion he expresses his abhorrence of the footnotes which say merely *l. c.* (*loco citato*, in the place before cited), requiring long and weary search, perhaps, for the original citation. He continues: "Some authors add a bibliography without citing names or without references to the titles in the text, so that such a tail-piece, parading as an evidence of the literary and collecting industry of the author (or of some one paid for looking up the references) is absolutely useless to any one. A bibliography is valuable only as it saves future readers the trouble of hunting up the references. Consequently, the contents of each work cited should be indicated in some way. This might be done by adding a brief summary of the article to each title or by grouping them according to the phases of the subject. Quoting rare and practically inaccessible periodicals, transactions and the like, has scarcely more than decorative value. At least, they should be accompanied by the indication of some accessible periodical in which an abstract of the article cited can be found."

### Physicians and Their Profession.

Under the above title the Trenton (N. J.) *American* comments editorially as follows:

"There are few professional men so habitually misunderstood as physicians. The clergy are expected to practice self-effacement, to work unselfishly for others, to be constant in good works, hoping only for a future reward. But the bodily physician ofttimes vies with the physician of souls in his loving kindnesses and self-sacrifices, yet his acts are usually rewarded with suspicion.

"Popular ignorance is responsible for quackery in religion and in medicine. There are hosts of charlatans pretending to be able to cure souls of sin for a price, and there are quite as many who, for a similar consideration, promise to cure bodily ailments. If people would only take the trouble to learn something of religion and something of medicine, they would escape impostors in both of these professions.

"The health of a community depends largely on its information regarding the laws of Nature. Epidemics are invariably products of ignorance. Disease is the result of natural causes. The medical profession has sought out and is seeking out these causes. It alone can not remove them, but the intelligent action of the people can remove many of them.

"It has long been a practice of the Christian churches to send missionaries abroad to open a way for the establishment of churches and the advancement of religion. The American Medical Association has undertaken a similar missionary work and Dr. J. N. McCormack of Kentucky is touring the country for the enlightenment of many on the subject of medicine and its practitioners. His mission is to inform the ignorant of the possibilities and limitations of medicine and how to avoid calling the doctor. A strange mission for one whose living depends on his patients? Yes, if the practice of medicine is regarded as a mere money-making agency. But not at all strange if one is large enough to believe that all men are not sordid seekers after material gain."

### More Societies Agree on Insurance Fees.

Dr. J. Meigs of Lowell, Mass., reports that the Middlesex North District Medical Society voted at its last meeting that a minimum fee of $5 for life insurance examinations be adopted. The Androscoggin County (Maine) Medical Association and the St. Louis County (Minn.) Medical Society have taken similar action.

The Southern District (N. D.) Medical Society and the Van Buren County (Iowa) Medical Society have adopted the Kentucky resolutions.

### Legislation Notes.

Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, has sent out a circular letter to the 60 county secretaries in his state, emphasizing the importance of cooperation between the state board and the county and state medical societies. Dr. Stevens says:

"Our board greatly appreciates the active and valuable assistance rendered by the county medical societies, in helping us to get rid of the medical quacks and impostors who have infested our state and robbed its citizens so long. We want to enlist every member in the state in an active campaign to aid us in securing the passage of bills now pending in the state legislature, introduced for the purpose of improving the standing of the profession, and in defeating the bills introduced by the quacks themselves in an endeavor to weaken and destroy the effectiveness of the laws we now possess."

One of the most promising features of society activity since reorganization is the effectiveness of cooperation between state boards and the organized profession. Where there is complete cooperation and unanimity between these two forces results otherwise impossible can be obtained.

It is reported that the New York County Medical Society has asked for the passage of a bill to protect reputable physicians who may be called in consultation in cases in which criminal operations have been or may be later performed. The law in New York state provides that any physician known to be present when an illegal operation is performed or who may be found treating a patient after such operation, is liable to arrest, fine and imprisonment. An instance recently occurred in which a physician, a member of the New York County Medical Society, was called in consultation after a criminal operation had been performed. On investigating the law he found that he was equally liable with the physician who had performed the operation. It is reported that steps will be taken to amend the law so as to relieve physicians of responsibility and liability in case they are innocently called in as consultants.

The standing committee on tuberculosis of the Medical Society of the State of Alabama has issued a pamphlet and address to the members of the state legislature, setting forth the position of the profession regarding the control and suppression of tuberculosis in that state. The pamphlet explains the most recent views on the subject and points out the manner in which, through proper legislation, the citizens of the state may be protected from this disease.

The physicians of Shelbyville, Ill., have sent to the legislative committee of the Illinois State Medical Society a resolution protesting against the passage of senate bill No. 21, introduced by Senator Chaffee, whose home is in Shelbyville, regulating the practice of osteopathy in Illinois. A protest is made against the passage of the bill and the legislative committee is urged to use every means in its power to prevent the bill from becoming a law.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### SWEET BREATH IN INFECTIOUS DISEASES.

CHICAGO, March 28, 1907.

*To the Editor:*—In some cases of scarlet fever I have noticed a sweet chloroform-like odor of the breath which seemed the only sign by which, in the absence or masked condition of the rash and symptoms, a diagnosis could be made. What is the significance of this odor? DR. CHARLES F. STOTZ.

ANSWER.—A sweetish odor of the breath is frequently noticed in diabetes, in which it has been attributed to the presence of acetone. A similar odor has been described as occurring in the breath of women during menstruation. A sweetish odor has also been noticed in septicemia and pyemia. As acetone is present in the blood in various diseases, especially in the infections, like measles, scarlet fever, etc., it is likely that the sweetish odor of the breath will occasionally be noticed in such cases, when not obscured by fetor. No definite significance can be attached to such an odor, as it may occur under such diverse circumstances; if due to acetone, it may not be of great importance. The symptom should suggest examination of the urine, however, and may be reason for guarding against excessive acidosis which is to a greater or less extent a phenomenon of a large number of infections.

### DATE OF DESCRIPTION OF BEARD'S TREATMENT OF CANCER.

MUSKOGEE, I. T., March 27, 1907.

*To the Editor:*—On page 1030, vol. xlviii, No. 12, is a reference to THE JOURNAL A. M. A., Feb. 17, 1907, page 544. There was no issue on February 17, nor do I find on page 544 of THE JOURNAL of Feb. 16, 1907, the reference to Dr. John Beard and the pancreatic treatment of cancer. H. H.

ANSWER.—The year is an error. The abstract will be found in THE JOURNAL, Feb. 17, 1906.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 30, 1907:

Miller, E. W., asst.-surgeon, left Cuba, en route to the United States, to avail himself of twenty days' leave of absence.

Lynch, Charles, general staff, will proceed, at the proper time to Boston, Mass., for the purpose of delivering a lecture on April 17, 1907, to the medical officers of the Massachusetts Volunteer Militia.

Jones, Percy L., asst.- surgeon, now on leave of absence from Fort Preble, Me., will, one the expiration of his leave, proceed to Jamestown Exposition Grounds, Va., and report to the commanding officer, Jamestown Encampment, for duty as assistant to the chief medical and sanitary officer.

Smith, Lloyd L., asst.-surgeon, ordered to proceed from West Point, N. Y., to Fort Monroe, Va., for temporary duty.

Rockhill, E. P., asst.-surgeon, reported at Army General Hospital, Presidio of San Francisco, from Manila, P. I., for treatment.

Morris, Samuel J., asst.-surgeon, now on duty at Fort Washington, Md., will furnish such medical attendance at Fort Hunt, Va., as may be needed during the absence of Contract Surgeon Hart.

Gilchrist, Harry L., asst.-surgeon, granted leave of absence for one month.

Conzelmann, F. F., contract surgeon, ordered from New York, N. Y., to Fort Ethan Allen, Vt., for duty.

Roberts, Ernest E., contract surgeon, left Fort Riley, Kans., on leave of absence for ten days.

Gunckel, G. I., dental surgeon, arrived at San Francisco, from Philippine service; ordered to Fort McPherson, Ga., and granted leave of absence for two months.

Mason, G. M., dental surgeon, relieved from duty at Fort McPherson, Ga., and ordered to Manila, P. I., for Philippine service.

Miller, A. L., contract surgeon, arrived at San Francisco, on leave of absence for two months, eighteen days, from the Philippines Division.

Long, S. M., contract surgeon, arrived at San Francisco, on leave of absence for one month from the Philippines Division.

Lambkin, E .E., contract surgeon, arrived at San Francisco, from Philippine service, and ordered to his home, Baltimore, for annulment of contract.

Byars, C. R., contract surgeon, left Fort Ethan Allen, Vt., for his home, Houston, Texas, for annulment of contract; granted leave of absence for one month.

Van Kirk, H. H., contract surgeon, returned to Fort Logan, Colo., from temporary duty at Fort Wingate, N. M.

Love, Joseph W., contract surgeon, granted leave of absence for fourteen days.

Bown, Polk D., contract surgeon, granted leave of absence for ten days.

Ingalls, Raymond E., dental surgeon, ordered from Los Angeles, Cal., to Fort Leavenworth, Kans., for duty.

## Navy Changes.

Changes in the Medical Corps, U. S. N., for the week ending March 30, 1907:

Farwell, W. G., asst.-surgeon, detached from the *Worden*, April 15, and ordered to the *Lancaster*.

Schwerin, L. H., acting asst.-surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Worden*.

Hammar, A., pharmacist, ordered to the Naval Hospital, New Fort Lyon, Colo., for such duty as he may be assigned.

Holloway, J. H., P. A. surgeon, detached from duty with Naval Recruiting party No. 4, and ordered to the *Indiana*.

Ryder, C. E., P. A. surgeon, detached from duty at the Naval Recruiting Station, Omaha, and ordered to the *Vermont*.

Butler, C. St. J., P. A. surgeon, detached from duty at the Naval Hospital, San Juan, Porto Rico, and ordered to attend course of instructions at the Naval Medical School, Washington, D. C.

Brown, E. M., P. A. surgeon, detached from duty under the department of government and sanitation, Canal Zone, Isthmus of Panama, and ordered to the Bureau of Medicine and Surgery, Navy Department for special duty.

Bogan, F. M., P. A. surgeon, detached from duty at the Naval Recruiting Station, Baltimore, and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

May, H. A., asst.-surgeon, detached from the *Indiana* and ordered home to await orders.

Belknap, J. L., asst.-surgeon, detached from duty with Marines in Cuba and ordered to the *Kentucky*.

Schaller, W. F., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., April 3, and ordered to *Brooklyn*.

Brown, H. L., asst.-surgeon, detached from duty with Naval Recruiting Party No. 3, and ordered to attend course of instruction at Naval Medical School, Washington, D. C.

Shook, F. M., asst.-surgeon, detached from duty at the Naval Hospital, Mare Island, Cal., and ordered to duty under the department of government and sanitation, Canal Zone, Isthmus of Panama.

Munson, F. M., asst.-surgeon, detached from Naval Proving Ground, Indian Head, Md., and ordered to attend course of instruction, Naval Medical School, Washington, D. C.

Chappelear, F. D., acting asst.-surgeon, detached from Naval Medical School, Washington, D. C., and ordered to duty at the Naval Hospital, Pensacola, Fla.

Castro, D. H., acting asst.-surgeon, detached from Naval Medical School, Washington, D. C., and ordered to duty at the Naval Recruiting Station, Baltimore.

Curtis, E. E., acting asst.-surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to duty at the Naval Hospital, Norfolk, Va.

Jones, A. McK., acting asst.-surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to duty with Naval Recruiting Party No. 4.

## Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 27, 1907:

Pettus, W. J., asst. surgeon-general, granted leave of absence for four days from March 27, 1907.

Stoner, G. W., surgeon, granted leave of absence for four days from March 18, 1907, under Paragraph 189 of the Regulations.

Banks, C. E., surgeon, leave of absence granted for fourteen days from Feb. 21, 1907, revoked.

Carrington, P. M., surgeon, granted leave of absence for three days from March 23, 1907, under Paragraph 189 of the Regulations.

Lumsden, L. L., P. A. surgeon, granted leave of absence for one month from March 18, 1907, on account of sickness, with permission to leave his station.

Fox, C., P. A. surgeon, granted leave of absence for one month from March 28, 1907.

Collins, G. L., asst.-surgeon, granted leave of absence for one day.

Long, H. D., asst.-surgeon, relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to rejoin his station at Ellis Island, New York.

Guthrie, M. C., asst.-surgeon, relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to proceed to Ellis Island, New York.

Porter, J. Y., sanitary inspector, directed to proceed to Pensacola, Fla., for special temporary duty.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for 11 days from March 14, 1907.

Stanton, J. G., acting asst.-surgeon, granted leave of absence for three days from March 20, 1907.

Safford, M. V., acting asst.-surgeon, directed to proceed to Ellis Island, New York, for special temporary duty, upon completion of which rejoin his station at Boston.

Small, E. M., acting asst.-surgeon, granted leave of absence for 8 days beginning April 15, 1907.

Thurston, E. J., pharmacist, relieved from duty at Gulf Quarantine Station and directed to proceed to Mobile Quarantine Station, reporting to the medical officer in command for duty.

La Grange, J. V., pharmacist, relieved from duty at Boston and directed to proceed to Savannah, Ga., reporting to the medical officer in command for duty and assignment to quarters.

### BOARD CONVENED.

A board of medical officers was to meet at Seattle, Wash., March 28, 1907, for the purpose of making physical examination of an alien. Detail for the board: Asst.-Surgeon H. G. Ebert, chairman; Acting Asst.-Surgeon F. R. Underwood, recorder.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 29, 1907:

### SMALLPOX—UNITED STATES.

Georgia: Augusta, March 12-26, 11 cases.

Illinois: Chicago, March 16-23, 9 cases, 1 death; Galesburg, March 9-23, 9 cases; Springfield, March 7-14, 1 case; Danville, March 13-27, 3 cases; Stark County, to March 13, 275 cases.

Indiana: Culver, Jan. 21-March 5, 6 cases; Elkhart, March 16-23, 4 cases; Indianapolis, March 10-24, 9 cases.

Iowa: Dubuque, March 18, 63 cases; Peoria, Feb. 2-March 23, 63 cases; Spencer, Jan. 8-March 14, 5 cases.

Kansas: General, Jan. 1-31, 126 cases.

Louisiana: New Orleans, March 9-23, 35 cases, 2 deaths, (7 cases imported); Shreveport, March 9-16, 1 case.

Massachusetts: Boston, March 16-23, 1 case.

Michigan: Centerville, Feb. 20, 36 cases; Detroit, Feb. 9-23, 12 cases.

Minnesota: General, Jan. 28-March 11, 295 cases; Winona, March 9, 1 case; March 16-23, 2 cases.

Mississippi: Natchez, Feb. 2-March 16, 13 cases.

Missouri: St. Joseph, March 16-23, 15 cases; St. Louis,1 case.

New Jersey: Newark, March 16-23, 1 case.

New York: Binghamton, March 16-23, 3 cases; New York, 3 cases.

North Carolina: Charlotte, March 9-23, 2 cases; Greensboro, March 9-16, 1 case.

Ohio: Cleveland, March 15-22, 1 case; Hamilton, Feb. 9-16, 9 cases.

South Dakota: Sioux Falls, March 9-23, 2 cases.

Texas: Galveston, March 15-22, 1 case; Williamson County, Georgetown included, Dec. to March 23, 75 cases, 1 death.

Virginia: Richmond, March 9-23, 2 cases.

Washington: Spokane, March 2-16, 26 cases, 1 death.

Wisconsin: Milwaukee, March 9-23, 11 cases; Wausau, March 9-16, 1 case.

### SMALLPOX—INSULAR.

Philippine Islands: Manila, Feb. 2-9, 1 case (on S. S. *Ban Yek*).

### SMALLPOX—FOREIGN.

Africa: Algiers, Feb. 1-28, 2 deaths.

Brazil: Para, March 2-9, 2 cases; Rio de Janeiro, Feb. 24-March 3, 4 cases, 1 death.

Chile: Coquimbo, Feb. 25, 24 cases, 1 death; Iquique, Feb. 25, present.

China: Hongkong, Jan. 26-Feb. 2, 9 cases, 6 deaths.

Colombia: Cartagena, March 2-9, present.

Ecuador: Guayaquil, Feb. 23-March 2, 4 cases.

Egypt: Cairo, Feb. 25-March 4, 3 cases, 1 death.

France: Marseilles, Feb. 1-28, 230 deaths; Paris, Feb. 23-March 9, 14 cases.

Germany: Bremen, March 2-9, 1 case.

Gibraltar: Feb. 25-March 10, 5 cases.

Great Britain: Bristol: Feb. 23-March 2, 1 case; Cardiff, March 2-9, 2 cases.

India: Bombay, Feb. 12-26, 10 deaths; Calcutta, Feb. 9-16, 41 deaths; Madras, Feb. 16-22, 1 death.

Italy: Naples, March 9-16, 2 cases.

Madeira: Funchal, Feb. 24-March 10, 3 cases, 2 deaths.

Mexico: Aguas Calientes, March 9-16, 10 deaths; Jalapa, March 8-15, 1 death; Mexico, Dec. 29-Jan. 26, 66 deaths; Jan. 27-Feb. 16, 44 deaths.

Netherlands: Rotterdam, March 2-9, 1 death.

Portugal: Lisbon, Feb. 23-March 9, 11 cases.

Russia: Moscow, Feb. 9-March 2, 3 cases, 4 deaths; Odessa, Feb. 23-March 2, 43 cases, 7 deaths; Riga, Dec. 1-31, 16 cases; March 2-9, 6 cases; Warsaw, Feb. 2-9, 3 deaths.

Salvador: San Salvador, Feb. 9-16, 2 cases.

Spain: Barcelona, Feb. 18-March 10, 7 deaths; Cadiz, Feb. 1-28, 6 deaths; Seville, 28 deaths; Valencia, Feb. 23-March 2, 1 case.

### YELLOW FEVER—UNITED STATES.

Louisiana: Mississippi River Quarantine, March 20, 1 case (on S. S. *Cayosoto*, from Cuban and Mexican ports).

Texas: Galveston Quarantine, March 22, 3 cases (on S. S. *Basil*, from Para).

### YELLOW FEVER—FOREIGN.

Brazil: Nichtheroy, Feb. 16, 1 case; Rio de Janeiro, Feb. 24-March 3, 2 cases, 2 deaths.

Ecuador: Guayaquil, Feb. 23-March 2, 7 deaths.

Mexico: Paraje Nuevo, March 3-9, 1 case, 1 death.

Peru: Callao, Feb. 17-19, 1 case, 1 death (on S. S. *Palena*).

CHOLERA.

India: Bombay, Feb. 12-26, 3 deaths; Calcutta, Feb. 9-16, 58 deaths; Madras, Feb. 9-22, 19 deaths; Rangoon, Feb. 2-16, 23 deaths.

PLAGUE.

Australia: New South Wales: Kempsey, Jan. 29, 1 case, 1 death; Sydney, Jan. 19-Feb. 2, 12 cases, 3 deaths. Queensland: Brisbane, Jan. 19-Feb. 2, 9 cases, 4 deaths; Port Douglas, Jan. 19-26, 31 cases, 1 death.

Brazil: Para: Feb. 23-March 9, 11 cases, 7 deaths; Rio de Janeiro, Feb. 10-March 3, 9 cases, 3 deaths.

Chile: Antofagasta, Feb. 25, 10 cases, 4 deaths.

Egypt: Assiout Province, Feb. 7-25, 12 cases, 10 deaths; Ballana Province, Feb. 23-27, 20 cases, 16 deaths; Beni Souef Province, Feb. 23-24, 2 cases, 1 death; Ismailia, Feb. 25-26, 2 cases, 2 deaths; Girgeh Province, Feb. 8-27, 7 cases, 5 deaths; Keneh Province, Feb. 26, 2 cases, 2 deaths; Minieh Province, Feb. 25-27, 3 cases, 1 death.

Formosa: General, Jan. 1-31, 165 cases, 141 deaths.

India: General, Feb. 9-16, 27,384 cases, 23,411 deaths; Bombay, Feb. 12-26, 384 deaths; Calcutta, Feb. 9-16, 17 deaths; Rangoon, Feb. 2-16, 105 deaths; Mauritius: Jan. 24-Feb. 14, 27 cases, 18 deaths.

Peru: Chepen, Feb. 14, 1 death; Chiclayo, 5 cases, 4 deaths; Cholseca, 13 cases, 6 deaths; Lambayeque, 3 cases, 1 death; Lima, 2 cases; Pacasmayo and San Pedro, 3 cases, 3 deaths; Trujillo, 1 case; Viru, 3 cases, 3 deaths.

Russia: Cronstadt, March 5, 1 case, 1 death (laboratory plague).

CHOLERA—INSULAR.

Philippine Islands: Manila, Feb. 2-9. 10 cases, 5 deaths.

## Marriages

PHILIP RICHARD TAYLOR, M.D., to Mrs. P. R. Taylor, both of Louisville, Ky., March 19.

JOSEPH C. PLACAK, M.D., to Miss Eunice Sabina Emde, both of Cleveland, Ohio, March 20.

STEPHEN A. HEMMI, M.D., to Miss Helen Librenz, both of Chicago, at Springfield, March 23.

BRUNO L. SCHUSTER, M.D., to Miss Louise Kumz, both of Milwaukee, Wis., in Chicago, March 21.

HARRY J. MOSS, M.D., Philadelphia, to Miss Adeline E. Grobwan of Woodbine, N. J., March 17.

KENNETH NOBLE, M.D., to Mrs. Berthia Z. Schuenight, both of Milan, Mich., at Monroe, Mich., February 28.

LUCIUS F. C. GARVIN, M.D., formerly governor of Rhode Island, to Miss Sarah Emma Tomlinson, both of Lonsdale, R. I., April 2.

## Deaths

**Reed Brockway Bontecou, M.D.** Vermont Academy of Medicine, Castleton, 1847; a member of the American Medical Association and delegate to the International Medical Congresses of 1887 and 1890; surgeon of the old Twenty-fourth Regiment, New York State Militia, since 1849; surgeon throughout the Civil War, serving first with the Second New York Volunteer Infantry and later as brigade surgeon of volunteers; on duty in the surgeon-general's office, Washington, 1862, and afterward chief military officer of all hospitals at Beaufort, N. C.; in charge of the Haverford U. S. Army General Hospital, Washington, from 1863 until its discontinuance in 1866; one of the most extensive contributors to the Medical and Surgical History of the War of the Rebellion; brevetted lieutenant-colonel and colonel of volunteers in 1865 for faithful and meritorious service during the war; first surgeon of the Troy (N. Y.) Hospital; surgeon at the Marshall Sanitarium, Troy, since 1880; attending surgeon at the Watervliet Arsenal since 1870; who contributed much to medical literature and especially to military surgery; said to be the originator and first to practice the application of photography to the history of military surgery as well as the first in this country and the second in the world to attempt to repair a typhoid perforation (in 1887), died at his home in Troy, N. Y., March 27, after an illness of one week, aged 82.

**George G. Wheelock, M.D.** College of Physicians and Surgeons in the City of New York, 1864; for a year in charge of the Army General Hospital, Savannah, and later house surgeon at the New York Hospital; formerly assistant demonstrator of anatomy, lecturer on physical diagnosis, trustee, registrar of the board of trustees, and treasurer of the alumni association of his alma mater; later a trustee of Columbia University; manager of the Vanderbilt Clinic and president of the Sloane Maternity Hospital; a trustee of the New York Dispensary, New York Institution for the Blind, Children's Aid Society, and president of the State Charity and Aid Association, died at his home in New York City, March 22, from heart disease, after an illness of two years, aged 68.

**Jerome B. Thomas, M.D.** Jefferson Medical College, Philadelphia, 1858; assistant surgeon of the Twenty-fourth Illinois Volunteer Infantry; later surgeon-in-chief of the government hospitals at Bowling Green, Ky., and Gallatin, Tenn.; afterward acting medical director on the staff of General Pain, and, at the close of the Civil War, in charge of the Army General Hospital, Nashville; who practiced in Wyandotte, Kan., after the war, and since 1888 had been governor of the Central Branch of the National Soldiers' Home for Disabled Volunteer Soldiers, National Home, Dayton, Ohio, died at his residence, March 5, after an illness of four weeks, from heart disease, aged 71.

**William Carr Glasgow, M.D.** St. Louis Medical College, 1869; a member of the state and county medical societies; professor of clinical medicine and laryngology in Washington University Medical Department; president of the American Laryngological Society in 1890; fellow of the American Climatological Society; consulting physician on diseases of the throat and chest at the St. Louis City Hospital and the Martha Parsons Hospital for Children, died at his home in St. Louis, March 22, from uremia, after an illness of two years, aged 62.

**Henry Root, M.D.** New York University Medical College, 1859; of Whitehall, N. Y.; a member of the state and county medical societies, and for 12 years secretary of the latter; a veteran of the Civil War, in which he served as surgeon of the Fifty-fourth and Fifty-eighth New York Volunteer Infantry and was brevetted lieutenant colonel; for several terms vice-president of the Society of the Army of the Potomac; health officer of Whitehall for many years, died suddenly at Saratoga, March 20, from cerebral hemorrhage, aged 70.

**William D. McCarthy, M.D.** Cooper Medical College, San Francisco, 1882; a member of the state and county medical societies; major and surgeon of the First California Infantry, U. S. V., during the Spanish-American War, who served with that regiment in the Philippine Islands, died at his home in San Francisco, March 15, from rheumatism, contracted in the service, after a long illness, aged 46.

**Hiram M. Keyser, M.D.** Rush Medical College, Chicago, 1863; on duty at Camp Douglas, Chicago, in 1862 and 1863; receiving and disbursing agent for the territory of Montana in 1866 and 1867; representative to the Thirty-fifth General Assembly of Illinois; for several terms mayor of Momence, Ill., died at his home in that city, January 24, from angina pectoris, aged 72.

**George Henry Van Wagner, M.D.** Albany (N. Y.) Medical College, 1881; a member of the state and county medical societies; at one time president of the county medical society; for many years health officer for the town of Poughkeepsie, and the village of Wappingers Falls, N. Y., died at his home in Wappingers Falls, March 19, after a lingering illness, aged 55.

**Otto Albert Weigand, M.D.** College of Physicians and Surgeons in the City of New York, 1890; a member of the American Medical Association; one of the best known young practitioners of Hudson County, N. J., died at his home in Hudson City, N. J., March 23, from tuberculosis, after an illness of more than three months, aged 38.

**Amos J. Jones, M.D.** College of Physicians and Surgeons, Baltimore, 1868; a member of the state and county medical societies; for four years a soldier in the Confederate service during the Civil War, and for the last four years health officer of Duplin County, N. C., died at his home in Kenansville, March 18, after a brief illness, aged 63.

**Thomas B. Lacey, M.D.** Northwestern University Medical School, Chicago, 1875; professor of surgery in the John A. Creighton Medical College, Omaha, and for more than 30 years a practitioner of Council Bluffs, Iowa, died at his home in that city, March 25, from syringomyelia, after an illness of six years, aged 55.

**George Miller Hull, M.D.** Medical Department, Omaha University, 1885; a member of the American Medical Association, and secretary for many years of the Buffalo County Medical Association, died at his home in Kearney, Neb., February 27, after an illness of nearly a year, aged 43.

**James William Murfin, M.D.** St. Louis Medical College, 1879; a member of the American Medical Association, died at his home in Vernon, Ill., February 23, from septicemia following an operation for the removal of the turbinated bones, after an illness of four days, aged 51.

**Pemberton Dudley, M.D.** Homeopathic Medical College of Pennsylvania, Philadelphia, 1861; formerly dean of Hahnemann Medical College, died at his home in Philadelphia, March 25, as the result of injuries received in a street-car accident in December last, aged 69.

**William B. Irish, M.D.** Western Pennsylvania Medical College, Pittsburg, 1894; a member of the American Medical Association, and for 10 years a practitioner of Pittsburg, died at his home in that city March 22, from pneumonia, after an illness of six days, aged 36.

**Charles E. McAdams, M.D.** Missouri Medical College, St. Louis, 1869; a member of the state and county medical societies, of Wichita, Kan.; for several years a councilman of that city, died suddenly in Kansas City, Mo., March 19, from heart disease, aged 61.

**Hezekiah D. Fuller, M.D.** Albany (N. Y.) Medical College, 1879; a member of the state and county medical societies and of the Fox River Valley Medical Association, died at his home in Berlin, Wis., March 20, from uremia, after an illness of two days, aged 57.

**Harland S. Boardman, M.D.** Homeopathic Hospital College, Cleveland, 1877; formerly president of the Vermont State Homeopathic Society, died at his home in Montpelier, March 21, from organic heart disease, after an illness of several years, aged 56.

**Owen Eugene McCarty, M.D.** Trinity Medical College, Toronto, 1890; a member of the American Medical Association, and a practitioner of Niagara Falls, N. Y., since 1892, died at his home, March 25, after an illness of several months, aged 36.

**George Elmer Sanford, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1875; a member of the state and county medical societies, died suddenly at his home in Saline, Mich., March 18, from heart disease, aged 56.

**Albert Fox, M.D.** Eclectic Medical College of the City of New York, 1871; once president of the Eclectic State Medical Association of New York, died at his home in Waterbury, Conn., March 20, from senile debility, aged 81.

**George W. Hunt, M.D.** Castleton (Vt.) Medical College, 1854; dean of the medical profession of Sullivan County, N. H., died at his home in Cornish Flat, N. H., March 3, from nephritis, after an illness of ten days, aged 77.

**Mary E. Van Schoonhoven, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1891; died at her home in Salt Lake City, Utah, March 20, from valvular heart disease, aged 64.

**Edward L. Carpenter, M.D.** University of Louisville, Medical Department, 1886; a school trustee of Louisville for two terms, died at his home in that city, March 23, after an illness of several weeks, aged 41.

**Joseph Marshall, M.D.** St. Louis Medical College, 1853; a veteran of the Civil War and for many years a practitioner of Normal, Ill., died at his home March 21, from dropsy, after a long illness, aged 74.

**Edward J. Jenner, M.D.** Eclectic Medical Institute, Cincinnati, 1878; formerly of Birds, Ill., died suddenly at his country home near Lawrenceville, Ill., from heart disease, March 22.

**Thomas W. Davis, M.D.** Western Reserve University Medical College, Cleveland, 1857; for half a century a practitioner of De Witt County, Ill., died at his home in Wapella, March 16, aged 79.

**John J. Hopkins, M.D.** New York University Medical College, 1874; a surgeon in the Confederate service during the Civil War, died at his home in Upper Tract, W. Va., March 24, aged 65.

**Charles R. Brown, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1873; died suddenly at his stable in Lynn, Mass., March 21, from heart disease, aged 70.

**William L. Linder, M.D.** Medical College of the State of South Carolina, Charleston, 1900; was shot and instantly killed in his office, in Union, S. C., March 25, aged 29.

**William Steward, M.D.** Bellevue Hospital Medical College, New York City, 1886; died in the Brooklyn Hospital from pneumonia, Dec. 24, 1906, after an illness of one week.

**Charles F. Morcom, M.D.** New York University Medical College, 1889; died at his home in New York City, March 23, from cirrhosis of the liver.

**Morris E. Michel, M.D.** Medico-Chirurgical College of Philadelphia, 1893; died at his home in Pittsburg, Pa., March 20, aged 62.

# *Society Proceedings*

## COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

Tennessee State Medical Assn., Nashville, April 9.
Mississippi State Medical Association, Gulfport, April 10.
Medical Assn. of State of Alabama, Mobile, April 16.
Florida Medical Association, Tampa, April 17.
Med. Soc. of the State of California, Del Monte, April 16-18.
Medical Association of Georgia, Savannah, April 17.
South Carolina Medical Association, Bennettsville, April 17-19.
Medical and Chir. Faculty of Maryland, Baltimore, April 23-25.
Am. Confed. Reciprocating Exam. & Lic. Med. Bds., Chicago, Apr. 30.
Association of American Medical Colleges, Washington, May 6.
American Therapeutic Society, Washington, May 4-7.
Amer. Assn. of Genito-Urinary Surgeons, Washington, May 7-9.
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.
Amer. Climatological Association, Washington, May 7-9.
American Gynecological Society, Washington, May 7-9.
Amer. Laryngological Association, Washington, May 7-9.
Amer. Medico-Psychological Association, Washington, May 7-9.
American Ophthalmological Society, Washington, May 7-9.
American Orthopedic Society, Washington, May 7-9
American Pediatric Society, Washington, May 7-9.
American Assn. of Physicians, Washington, May 7-9.
American Surgical Association, Washington, May 7-9.
Nebraska State Medical Association, Lincoln, May 7-9.
Texas State Medical Association, Mineral Wells, May 7.
Utah State Medical Association, Salt Lake City, May 7-8.
New Mexico Medical Association, Las Cruces, May 8-9.
Kansas Medical Society, Kansas City, May 8-10.

## BOSTON MEDICAL LIBRARY MEETING.

*Held Feb. 13, 1907.*

DR. RICHARD C. CABOT, Chairman.

### MEDICAL SUPERVISION OF SCHOOL CHILDREN.

#### Physical Training in the Boston Public Schools.

DR. JAMES B. FITZGERALD said that gymnastics was introduced in the Boston schools in 1890 along the lines of Swedish gymnastics. A director was elected in 1891, but this form of training has never been fully established in all the Boston schools. It was proposed by the superintendent of schools in 1860, but failed to be approved by the school committee. Enebuske's book was used, and, under the regular classroom teachers, exercises tried in school rooms, halls, etc. In 1899 Dr. Fitzgerald became the director. He found that some teachers are better in this line than others and wherever possible has this "departmental" arrangement. Instead of the book there are a set of graded cards devised by Hartvig Nisson, physical director of the schools in Brookline. All exercises are at the word of command. None are rhythmic or automatic. There is no music. There is a definite order for each day, including facing, heaving, stretching, balance, back, abdomen, jump and breathing in regular sequence. Primary grades devote twelve minutes per day, and these exercises are more in the form of play. Grammar grades exercise sixteen minutes each day and seek West Point ideals. For purposes of play some simple gymnastic apparatus has been installed in ten of the school buildings. There should be a special teacher of physical training for every grammar school district.

The best work in physical training in the schools is done by the girls in the high schools. They are required to spend two periods of forty-five minutes each week in gymnastic work, and excellence counts several points in their records as scholars. They need, however, to have medical examination.

The high school boys do little because of the military drill. It would be well if the schools were well rid of this. Something has been done in the supervision of competing athletes, however, and now all such competitors have a physical examination which certifies to their fitness. There are two instructors in athletics. In all the school athletes examined by the reader, he had found only one case of athlete's heart, no pulmonary tuberculosis and rarely any cardiac lesion. Their legs are, however, usually much better developed than their

chests. The department now has one director, four assistants and fifteen teachers. It needs athletic fields and more teachers for boys.

### School Hygiene As It Is and As It Ought to Be.

DR. SAMUEL H. DURGIN said that during the more than 30 years that he has been a member of the Boston Board of Health there has been much progress in the hygiene of school buildings. Thus privy vaults and cess-pools are abolished. There are separate toilet bowls and wash bowls. Basements are well lighted. Fresh air is obtained for the school rooms by air shafts and the needed power. Pupils are properly seated and not overcrowded. Still much is needed in the way of new buildings, school play grounds, etc. These matters are now in the hands of the school house commission, a very able body of men.

In 1894 agents of the Board of Health, physicians, were appointed to daily inspect the schools. Cases are referred to them by the teachers, diagnoses made, and the pupils either returned to the school room or sent home. Advice is given as to the best care for the others who may have been exposed to a contagious disease. Vaccinations are inspected and pediculosis detected. Each medical inspector receives a daily bulletin of all cases of contagious disease reported in Boston during the previous day and is expected to attend to the isolation of such cases in their homes. By examination of rashes and desquamations and cultures of throats and noses they determine when children shall be allowed to return to school. Other cities have followed Boston in this medical school inspection, and now the State of Massachusetts has made it obligatory in all cities and towns. There are many ways in which this inspection can be improved. It should be aided by trained nurses. All abnormalities should be detected, not only of sight and hearing. Necessary treatment should be insisted on. All exposed children should be followed up and examined. The school nurse, already a success in New York City, is now assured for Boston.

### Physical Welfare of Public School Children.

DR. S. C. BADGER'S paper was a preliminary report of a committee of five physicians appointed by the Boston School committee to study the lowest three grades. They advise that artificial light be introduced into these school-rooms and, when necessary because of dim light, schools should be dismissed. For the same reason windows should be washed more often. Two sessions are better than one. Recess in the afternoon should be longer and include more play. In the late afternoon there should be games and manual training. Grade I should be limited to 25 pupils, Grade II to 35, and Grade III to 45. Backward pupils should be studied by themselves. School nurses are needed. School yards should be open to the children after school hours and should have swings and such like apparatus, and when possible school gardens. Pupils should be allowed to continue play on the school grounds and public playgrounds after the close of the afternoon session.

As to medical inspection, the real inspection is done by the teachers and they vary in their skill and interest in this subject. It is desirable that the physician should observe all the children and not merely those referred to him by the teachers. This inspection has not been of much importance.

The work done seems to show that the public schools are not such great centers of infection as they have been thought to be.

The school nurse will help greatly as will co-operation by teachers. The value of special examinations are indicated that in one building with 1,275 pupils where the eyesight was tested this last year, 10 per cent. have been fitted to glasses. The committee found the children generally well nourished and healthy, with but few cases of apparent neglect.

### Medical Supervision versus Medical Inspection.

DR. THOMAS B. HARRINGTON maintained that the latter was not adequate. Physician, teacher and parent must co-operate, and often do not, in order to fit the child and the curriculum. Several foreign countries already have medical supervision of the schools, notably Austria and Japan. This medical supervision must have due authority, and in many matters besides infectious diseases. In this latter matter it would be better for the teacher to exclude suspicious cases and report to the board of health. Their inspectors and nurses should then follow up the cases in their homes. Something of this sort has already been done in New York City, and as a result, while in 1902 there were detected in the public schools 10,562 cases of contagious diseases, in 1903, with the new plan, only 1,001 were so sent home, others being detected in their homes or prevented by proper attention to the first case in the home.

Medical supervision, on the other hand, is a much wider subject and includes a study of the physical and mental development of the child. Not all grow equally. All develop best in certain periods. This the medical man must study and should control. The school should be a continuation of the home and the home should be the strength of the school.

#### DISCUSSION.

GEORGE H. MARTIN, secretary of the State Board of Education, told of the effort being made to interpret practically the words of the new law which require that "each child shall be examined annually for any defect or disability which may interfere with school work." Governor Guild asked a committee consisting of three members of the State Board of Health, three members of the State Board of Education, and three prominent physicians to consider the matter and report a plan. They appointed a subcommittee consisting of Dr. Robert W. Lovett, Dr. Charles Harrington, and Mr. Martin to prepare a circular to be sent to the medical inspectors throughout the state to secure uniform intelligent inspection. Conferences were held with specialists of all kinds and they were asked what defects they would expect to meet among school children, and the indications. As it was found that practically, in most places in the state this inspection must be made by the teachers, these specialists were asked to each prepare a brief, simple statement. This material was then gathered and arranged by the committee, and is now being printed. This circular, signed by those experts who are authority for its statements, will go to every teacher and medical inspector in the state, and is likely to form a most efficient aid.

DR. ARTHUR C. JELLY told of his work among the backward scholars. Graded classes are for the average pupil. For many years there have been "ungraded" classes for the backward pupils, and now there are seventy such classes in Boston. The same methods are employed as in the graded classes, the object being to coach them in some special lines, e. g., foreign born, frequently ill, slow developing, irregularly developing, deaf, partially blind, poorly nourished, or mentally deficient children.

In 1898 three classes were started especially for these, and in 1902, when Dr. Jelly took charge, four more such classes were established. There are 15 children in each, or 105 in all. At first they were chosen by the teachers, and lowest types were so separated. These were not capable of doing anything and the service was thrown away. Now the effort is made to induce parents to send such children to the School for Feeble Minded at Waverly. This gives a chance for the admission to these special classes of less extreme types, and often these can be so helped by the special training that they are able to return to the regular graded classes. It is thus possible to instruct the teachers and less obvious defects are now noticed by them and remedied. More such special classes are needed.

DR. JOEL E. GOLDTHWAITE said that the school system in Boston is broadly a great success. The problems are varied. With 40,000 pupils in the lowest three grades the only surprise is that the curriculum so well meets their varied conditions. Physicians must be careful not to condemn the system because of a few isolated examples of faults which come to their individual notice. Doubtless a much better system can be developed, but meanwhile be temperate and helpful in criticisms. The school committee and the teachers are remarkably efficient, and all suggestions of the committee were well received.

DR. WILLIAM H. POTTER said caries of the teeth is one of the most common defects among children. It disables insidiously, affecting mastication, digestion, nutrition, weight. Of 700 pupils examined in one building in Brooklyn this past year, 50 per cent. had poor teeth, 25 per cent. fair teeth, and 25 per cent. good teeth, by this being meant teeth which had "no readily observable defects."

DR. CHARLES PUTNAM said that the nearly 500 boys who are sent by the courts to the parental school at Roxbury, or to the Rainsford Island in Boston Harbor and put under the care of the trustees for children, all of them, nearly 500, have the benefit of regular examinations of teeth, sight and hearing. Surely it is proper that children who are not bad should have the same privileges.

MR. JOSEPH LEE, of the Civic League, told of two bills now before the legislature, one to combine the public baths, gymnasiums and playgrounds under one paid commissioner to be appointed by the mayor, with the advice and consent of the aldermen. This he opposed as not being practicable or likely to benefit the children. The other is to put the playgrounds and outdoor gymnasiums, as well as the public school yards, under the control of the school committee. This is based on the idea that they can and should care for the physical as well as the mental well-being of the children. Boston has playgrounds valued at $4,000,000, and appropriates $50,000 annually for their maintenance. Results are now being obtained. Supervision is needed. Men and big boys monopolize the spaces for baseball, etc. Children dare not go there. There are not many professional playground directors. The school committee is already in the business. The best teachers outdoors are those who teach indoors. One of the best places to determine a child's mental ability is while at his play. Such a man of the right character can get out all the scholars and not merely those who are proficient.

Attention was called to the International Congress of School Hygiene to be held in London, England, Aug. 4-9, 1907.

## NEW YORK ACADEMY OF MEDICINE.

*Regular Meeting, held March 7, 1907.*

The President, DR. JOHN A. WYETH, in the Chair.

### SYMPOSIUM ON TYPHOID FEVER.

#### The Typhoid Epidemic in Berwick, Pa.

DR. J. H. BOWMAN, Berwick, said that for two winters in succession Berwick has been visted by an epidemic of typhoid fever. In the winter of 1906-7 the epidemic began in October, and new cases were reported until Jan. 1, 1907. The total number of cases to March 1 was 114, with 9 fatalities. Berwick and its vicinity has a population of 15,000 and is dependent for its water supply on the Susquehanna River and several mountain streams. It is situated 41 miles below Scranton. The sewage of Scranton, as well as that of Wilkesbarre and Pittston, empties into the Susquehanna River. Soon after the outbreak of typhoid the water was turned off from the river and was not turned on again until February 15. An examination of the water from all sources has been made, but the presence of typhoid bacillus can not be demonstrated. An inspection of the water-sheds has also failed to reveal the source of the infection. The dairies have likewise failed to show the cause of the outbreak. Dr. Bowman concludes that the water was responsible for the epidemic and that the river probably caused the first cases and that these cases infected the mountain streams.

#### The Typhoid Epidemic in Pittsburg.

DR. J. F. EDWARDS, Pittsburg, said that typhoid fever has been present continuously in Pittsburg since 1873, or during the entire period of available statistics. Certain years or groups of years show higher percentages than others, but the mortality has always been high as compared with other American cities. The average mortality from 1880 to 1906 was 107 per 100,000 population. The lowest rate was 55 per 100,000 in 1894 and the highest 158 per 100,000 in 1882. It is evident that a predominant etiologic factor is at work continuously, but with varying intensity. The present high rate period began in 1899. The predominant cause was an infected water supply, although other agencies and conditions were also at work. The general water supply of the city is drawn from two intakes in the Monongahela River and two in the Allegheny River; the water is pumped directly into reservoirs and distributed to the people. Several wards in the city are supplied by corporations, one having its intake about a mile farther up the river than that of the city supply. There is said to be some filtration here by means of a crib in the river bed. One ward is supplied by a corporation which has its intake farther up the Monongahela River than the others and has installed an infiltration plant. This ward is at present practically free from typhoid fever. Both rivers have a large population in towns on the water's edge. There are larger towns along the Monongahela than along the Allegheny, and one would expect more typhoid in the portions of the city supplied by that river, but this is not the case. The Monongahela has a slow current and in low water stages is said to be pumped out and put back five or six times during its course. One of these times it must run back through the sewers of a town.

The mines and mills along the river introduce acid enough into the water to render it acid during low water. Five parts of sulphuric acid to 100,000 parts of water is fatal to typhoid germs in one and one-half hours. The river reaches a much higher percentage than this. The objection to this theory is that the river is alkaline during a greater part of the year and typhoid fever was prevalent in August when the water was low. The heating of large quantities of water by manufacturing plants along the course of the river also acts as a corrigent. Four large establishments pump 178,000,000 gallons per day and heat five and three-quarter millions gallons. Many others also use large amounts and return it in a sterile condition. During the winter 1905-6 typhoid prevailed in a number of boroughs above Pittsburg on the Allegheny and the March thaw probably accounts for the large increase in the number of cases reported during the month of April. No considerable number of cases could be traced to the milk supply. Since July, 1905, there has been a progressive increase in the number of cases, and during the year 1906 there were 5,729 cases with 508 deaths.

In general, it may be stated that typhoid fever was more prevalent in those districts where the standard of living is lowest. This class of people are less likely to boil the water and there are greater opportunities for contact infection. A large percentage of cases occurred among immigrants from Austria-Hungary, Russia and Italy. A municipal filtration plant is now near completion, and it is hoped that this will greatly diminish the ravages of this disease, which destroys on an average 300 of the most productive part of the population each year. The action of the state looking toward the prevention of pollution of streams throughout the state holds another promise of relief.

#### The Typhoid Epidemic at Scranton.

DR. J. M. WAINWRIGHT, Scranton, said that while reliable morbidity reports are not at hand, and while the disease has been constantly present in that city, it has not prevailed to any great extent as compared with other American cities. The fall rise in Scranton has not been nearly as great as in other cities. The sudden onset of the epidemic points to some sudden and large pollution of the water. A map showing the Scranton water supply, the larger part of which came from the Elmhurst reservoir, shows that the principal tributary of the Elmhurst reservoir was Roaring Brook which ran through Moscow, a village of about 800 inhabitants, and also through a hamlet of about 200 inhabitants. Until last September the water from the Elmhurst reservoir was delivered over a spillway and allowed to run several miles into a storage reservoir. This reservoir was abut 2,000 feet in length and the water displaced itself in every two to four days. A railroad runs near the brook and also one on either side of the Elmhurst reservoir. In the latter part of September the water was piped directly from the Elmhurst reservoir to the city cutting-out reservoir. The water was taken from near the bottom of the reservoir instead of over the spillway.

During the first week in December, 11 cases of typhoid fever were reported; this time suggested close connection with a heavy snowstorm on November 15, followed by warm rains, so that it was probable that a fecal accumulation was washed suddenly into the water. Considering the epidemic to have extended over December, January and February there were 1,155 cases reported and 111 deaths. The map of the city shows very strikingly that the distribution of the cases corresponds with the Elmhurst water supply. In portions of the

city having another water supply there were only 28 cases, and these were persons who were employed or who visited frequently in that part of the city supplied by the Elmhurst reservoir. After a painstaking search of the entire water-shed by both city and state authorities, the origin of the infection could not be located; this was probably due to the multiplicity of possibilities.

Dr. Wainwright drew the following conclusions from this epidemic: 1. All cases of typhoid fever ought to be reported promptly, as when this is neglected grave danger signs often pass unnoticed. 2. Municipal ownership was an advantage, as it eliminated the harm that a private corporation can do during an epidemic in its effort to guard the capital stock at the expense of disaster to the people. 3. The numerous nuisances that have been sustained along this water-shed demonstrated the necessity of rigid police inspection of the entire water-shed by inspectors employed by and for the people and not by the water company. 4. Frequent bacteriologic and chemical examinations of the water are another safeguard. 5. In times of epidemic the water supply should be changed, if possible. The necessity of boiling water and milk should be hammered into the people, and all possible precautions should be taken to protect the milk supply. The spread from individual cases should be prevented by visiting nurses, circulars of instruction and the free distribution of some *one* effective antiseptic. Too many antiseptics confuse people. 6. Typhoid fever is to a very great degree a directly communicable disease. 7. Physicians and sanitarians must recover from their habit of speaking of a certain number of cases of typhoid fever as normal, because typhoid is caused by imbibing more or less directly the feces of a sick man. The only normal for a civilized community is no case at all.

### Bacteriology of the Blood in Typhoid Fever.

DR. WARREN COLEMAN said that up to 1904, 75 per cent. of typhoid patients whose blood was examined revealed the presence of the typhoid bacillus. Broths were used in the earlier experiments, but the method now used is to take 90 c.c. of ox-bile, 10 c.c. glycerin and 2 grams of peptone. The mixture is distributed in small flasks, containing 20 c.c. each and is sterilized. Three of these flasks are used for every examination and about 3 c.c. of blood is run into each. The flasks are then incubated until the following morning, when streaks are made from each over the surface of a litmus-lactose-agar plate. If the micro-organisms are present they may be observed in five or six hours. If the growth does not redden the medium and the bacillus is found to be one resembling typhoid, the Widal reaction with immune serum is applied. In this way one can determine within twenty-four hours whether a case is one of typhoid.

Since using the ox-bile method a much larger percentage of positive results has been obtained; in fact, the results now obtained show that the bacillus is present in the blood in practically all cases of typhoid fever. Out of 224 examinations in the first week of the disease, 200, or 89 per cent., were positive. Of 484 examinations made in the second week of the disease, 353, or 73 per cent., were positive; of 268 examinations made in the third week, 178, or 60 per cent., were positive; of 103 examinations made in the fourth week, exclusive of relapses, 15 or 26 per cent. were positive. Therefore, the percentage of positive results is greatest in the first week of the disease and thereafter steadily declines. This does not indicate that the bacillus has disappeared from the blood in negative cases, but points to a diminishing number of bacilli, whose presence imperfect methods fail to reveal.

From investigations in regard to the absorption of the bacilli from the peritoneum and from the fact that the lymph nodes and spleen contain such enormous numbers of bacilli, it may be concluded that in typhoid fever the bacillus first finds its way from the alimentary tract to the lymphopoetic system, including the spleen, where it is developed chiefly and from whence it finds its way into the blood stream. It seems doubtful whether the bacillus multiplies in the blood; its presence means simply an overflow from the lymph organs. The presence of typhoid bacilli in the blood consequently does not constitute a true septicemia. The destruction of the bacilli proceeds most rapidly in the blood, and hence the disease is caused by the destruction of vast numbers of bacilli in the blood with the liberation of their endotoxins. It is accordingly irrational to believe that the course of the disease can be affected by intestinal antiseptics, because after the invasion of the body proper by the bacillus the battle ground shifts from the intestine to the blood.

There appears to be a definite relation in the evolution of typhoid fever between the symptoms and the bacillemia. The intensity of symptoms in the early stages of the disease corresponds to the active growth of the bacilli. They invade the blood stream in increasing numbers and are there destroyed. Then comes the stationary period when the ratio or growth and destruction appear to be uniform. The steep curve period corresponds to the diminishing bacillemia and defervescence to complete disappearance of the bacilli from the blood. Degenerative changes occur only in the presence of active growth and destruction of the bacilli. Relapses are probably caused by the persistence of some bacilli in the body and not by reinfection. The bacillemia apparently bears no relation to the type or severity of the disease, except as regards the number of bacilli. The bacilli are found in the blood with the same persistence in the mild as in the severe cases, and in the cases of short as well as in those of long duration. The definite establishment of the nature of these short duration cases would be of immense value from the epidemiologic standpoint.

A bacteriologic examination of the blood in 33 cases of relapse resulted in the recovery of the bacillus in 90 per cent. of the cases.

#### DISCUSSION.

DR. MORRIS MANGES, in speaking of the direct infection of one subject by another, told of the case of a woman baker in Germany. All those who ate her bread developed typhoid fever. The typhoid bacillus was found in her feces, and inasmuch as she used the same toilet and prepared the food for the others who contracted the disease, the source of infection was not hard to find. He cited another case of a woman who had some intestinal trouble and fed only on a beef diet. Her cook had a slight diarrhea, but the feces contained a number of spirillæ, thus showing the source of infection. It is difficult to find the foci of infection after the epidemic has passed away. The fact that the acidity of the river water in Pittsburg failed to do away with the typhoid germs shows how fallacious is the antiseptic action of the gastric juice on typhoid bacilli. He called special attention to the fallaciousness of statistics in small towns.

DR. SEDGEWICK said that the summary of infection is: Food, fingers and flies.

## *Medical Education and State Boards of Registration*

### COMING EXAMINATIONS.

ARKANSAS State Medical Board, Little Rock, April 9. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Medical Board, Little Rock, April 9. Secretary, Dr. V. H. Hallman, Hot Springs.

WEST VIRGINIA State Board of Health, Wheeling, April 9-11. Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, April 12. Secretary, Dr. Geo. C. Ober, Washington.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 16. Secretary, Dr. Chas. L. Tisdale, San Francisco, Cal.

MISSOURI State Board of Health, St. Louis and Kansas City, April 16-18. Secretary, Dr. J. A. B. Adcock, Warrensburg.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, April 17-19. Secretary, Dr. J. A. Egan, Springfield.

KENTUCKY State Board of Health, City Hall, Louisville, April 23. Secretary, Dr. J. N. McCormack, Bowling Green.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, April 30-May 1. Secretary, Dr. E. R. Anthony, Griffin.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

**Rules for Conducting Examinations in California.**—The following set of rules governing examinations for license to practice medicine in California were compiled by Dr. J. C. King, ex-president of the Board of Medical Examiners of that state:

1. Regular meetings of the Board of Medical Examiners of the State of California will be held on the first Tuesday of each April, August and December. Examinations will be held on the third Tuesday of each June, September and December, unless otherwise ordered by the board. Only necessary routine business may be transacted at any meeting held on a first Tuesday of any month.

2. The deliberations of this board shall be governed by Robert's Rules of Order, so far as they do not conflict with the state law under which this board is organized, nor with other rules adopted by this board.

3. Any motion to add to, rescind, alter or suspend these rules or any part thereof, shall be submitted to the committee on rules without debate. On the favorable report of the committee, said motion shall be put before the board for action, but, if adopted, shall not become operative until the next regular meeting.

4. There shall be three standing committees, to-wit: One of three members, on rules; one, of three members, on credentials of applicants; one, of two members, on auditing of accounts.

5. In determining the standard grammar and high schools, academies, colleges (other than medical) and universities, the opinion of the recorder or of the credential committee of the University of California shall be taken as a guide by this board.

6. As applications are received, the secretary shall immediately place at the disposal of the committee on credentials all documents relating to each and every new applicant. This committee shall, on the first day of each regular meeting, report to the secretary the result of their investigation. The secretary shall thereon, within twenty-four hours, mail to the address of each applicant a permit to take the examination; or, in lieu of such a permit, a statement showing in what respect the credentials and documents of the applicant are incomplete or defective, together with notice that said applicant may appeal, in person or by attorney, to the full board at its next meeting, specifying date and hour.

7. An adjourned meeting of the board shall be held in San Francisco at 9 a. m., on the day on which each examination shall begin. Prior to this meeting the committee on credentials shall present to the board, and to each individual member thereof, a formal, complete and typewritten report. This report shall include a list of the names of applicants to whom permits to take the examination shall have been issued; it shall specify, as regards each applicant individually, the reason why his or her credentials or documents, or any part thereof, shall have been deemed incomplete or defective by said committee. Thereon, any applicant to whom a permit shall have been refused or not issued, may appear before the board, in person or by counsel, and may present an amendment to his or her credentials or documents, or may appeal to the board from the decision of the committee. In case the amendment is accepted or the appeal sustained by the board, the secretary shall at once issue a permit to said applicant.

8. Immediately before an examination begins, a numbered envelope will be handed to each applicant. In this envelope the applicant shall insert his permit, after having signed his name and written his address on said permit, and shall then seal the envelope. Said envelope shall then be returned to the custody of the secretary and shall not be opened until all the markings connected with that examination shall have been completed and then only in the presence of the board. The number of the envelope shall become the number of the applicant whose name shall have been inserted therein. Each applicant shall remember his or her number and shall inscribe it, in plain figures, on the exterior of each set of examination papers. No other mark shall be placed on any paper whereby the identity of the applicant may be discovered.

9. Each member of the board, to whom a subject for examination shall have been allotted, shall prepare a list of questions, at least ten of which must be answered by each applicant.

10. All questions must be written with ink, in English.

11. Each question shall be graded and marked separately on a scale of 1 to 10, in plain figures in ink, on the margin of the examination paper. The total attained shall then be computed and marked on the exterior of said paper.

12. Each of the following, when made a part of any examination, shall constitute one question: (a) Identification of microscopic preparations; (b) identification of gross pathologic preparations; (c) clinical examination of patients; (d) any other practical work. In all such cases questions must be answered in writing as a part of the examination paper, in order that the identity of the applicant may not be revealed to the examiner.

13. No oral, clinical or other form of examination shall be conducted in a manner that will permit the applicant to reveal the identity of his or her number to an examiner, or to any other person.

14. During an examination no applicant shall consult, or open for inspection, any book, notes or other aids to memory; hold any communication with any other applicant; smoke tobacco; leave the room prior to the completion of his paper, unless accompanied by a member of the board, or by an inspector appointed by the board; create any unnecessary noise or disturbance; introduce into the room any visitor or friend. Violation of this rule will be punished by exclusion from the examination.

15. Two hours shall be allowed for the completion of papers on each subject.

16. On its completion, each examination paper shall be deposited by the writer thereof, in a ballot box to be provided for that purpose by the secretary. No examiner nor other person shall be permitted to handle or to inspect any such paper until after its removal from said box. No paper shall be removed from said box until after all papers relating to the same subject shall have been deposited therein, and then only by a member of the board. Each applicant is absolutely forbidden to reveal the identity of his or her number to any examiner, or to any other person, under penalty, if discovered, of summary rejection.

17. Each examiner shall be responsible for the removal from the ballot of all papers relating to the subject allotted to him, for the correct marking of the same, and for the delivery of the same to the secretary before 10 o'clock a. m., of the day next succeeding the last examination.

18. Section 1. On the day following the last day of examination the secretary shall record on a chart prepared for the purpose the number of each envelope, and beneath that number the markings attained in each subject by the examination papers correspondingly numbered.

Sec. 2. The numbers showing an average work of not less than 75 per cent., and also a mark of not less than 60 per cent. on any one subject, shall be deemed to have passed the examination.

Sec. 3. When it appears that any number has attained an average of at least 75 per cent., and yet has failed to attain at least 60 per cent. on any one or more subjects, then the board shall review papers so numbered, so far as they relate to defective subjects, and shall, by vote, re-mark each answer thereof, and the result arrived at by the board shall be inserted on the chart, instead of the original marking.

Sec. 4. All numbers which shall finally appear to have attained an average of less than 75 per cent., or which shall have attained less than 60 per cent. on any one or more subjects, shall be deemed to have failed.

Sec. 5. The numbered envelopes shall then be opened and the name on the permit contained therein shall be attached to the numbers on the chart corresponding to the numbers on the envelopes, thus determining the identity of each applicant.

Sec. 6. After the numbered envelopes shall have been opened, no change whatever shall be made in the markings or their result, except as hereinafter specified.

19. Within three days after the success or failure of applicants shall have been determined, the secretary shall send, by express or otherwise, to the address of each successful applicant, a license, properly signed and sealed, to practice medicine and surgery in the State of California. And he shall send, by mail, to the address of each unsuccessful applicant a statement showing his or her markings in each subject.

20. Applicants for reëxamination must, not later than the first Tuesday of any April, August or December, following the legal interval after their last examination, make application to the secretary for a permit, in the form prescribed for the first examination and accompanied by the same fee; except that no credentials need accompany the application. The secretary shall thereon issue to such applicants permits to take the next ensuing examination.

21. On the last day of each examination the secretary shall return to each applicant at the examination, his or her diploma and other documents, taking therefor a receipt from each specifying all documents delivered.

22. Any clerical error in computing the results of the markings may be corrected at any time by the secretary. But such correction must be reported to the board at its next session.

23. At the meetings in each April, August and December the secretary and treasurer shall present a complete report of receipts and expenditures, which shall be referred to the auditing committee.

# *Miscellany*

## An Advertsing Quack Wants a Helper.

The following advertisement appeared recently in a Chicago evening paper:

MALE HELP WANTED.

DOCTOR, SINGLE, REGISTERED IN PENNSYLvania; wanted in a Philadelphia advertising office by April 10; must be first-class casetaker; strictly sober; good letter composer, typewriter; put up prescriptions; hours 9-4, 6-9; Sundays, 9-2; steady man willing to sign five-year contract; should send photo; highest references or security; wages to start, $840 yearly; no board or lodging. Doctor, 204 2d-st., Miami, Fla.; send full particulars.

An answer to it brought forth the literary gem here appended:

MIAMI, FLA., Feb. 26, 1907.

*Dear Sir:*—Yours to hand, and in reply will say that I am a well-known specialist in Philadelphia, and my labratory (sic) contains, actual fact, over 3 to 4,000 different drugs and they are used and not for show. I am the only physician who positively cures Syphilis, Bright's Disease, Diabetis, Mellitus, Kidney and Bladder Disease and Cancers, if I can get at it. Psoriasis, Heart Liver, Rheumatism, Piles, all kinds Bronchitis, Malaria, Endwated, (?) Scrofulatic Glands, Shingles, etc., Spermatorrhea, Impotence and all other curable cases.

Whereas, I am an old man, hence I must have an honest man, who loves medicines, and who is not lazy and who tries to follow my method, the Eclectic, Homeopathic, Allopathic, Botanic. My drugs are very expensive by the combination, and hence a physician must be able to make the patient understand that he gets cured, that we don't give mercury, calomel, saltz etc., but we combine from 12 to 60 drugs and still they do not effect the stomach. I cure Syphilis, and I don't care how dangerous cases are, but the cost for each mild case, $285.00. Well we have to get from $350.00 to $500.00, and in dangerous cases the drugs cost between $350.00 to $500.00, and for those cases $750.00 to $1,000.00 is not too much. I am no fakir, I mean just what I claim, and the most expensive treatment and work has to be done in the first three months, and therefore patients have to pay all or a great deal of amount down, and I have proof of all I claim. Now then I need an honest man, who will work. All he has to be is a good diagnostician, and then study up the cases, and then prescribe according to my ℞.

How are you as a good case taker? That is, to take the patients who have the money? To pay my expenses it takes monthly $2,450.00; now you see that the money has to come in. Now, honesty and a good case taker is everything. Then above all, a man has to be strictly sober. Then if not sober, he can do no business. A man has to start in with $840.00 the first year, without board or $600.00 and board; but as I said, if he is a good man and can increase the income, he gets more. If he is not a good case taker, of course I don't want him, not even for his board. I am an old man, and as I said I need and honest man. Of course you would have to sign a contract for five years with a provision, that if you are not capable to fill the bill I can discharge you. Then it must be to you as reasonable as possible. That if you are not a good case taker, and not able to follow my method I could not keep you. I am sure a good case taker alone would not amount to much. If the man is not able to cure, you know as well as I do, that if you could only take the money and not cure, the people will say, "Oh that's a beat," and my office would soon go to H——.

Now please be kind enough to send me your photograph. I generally can have an opinion from the expression of the man's face. Consider this well. Hours 9 to 4, evenings from 6 to 8, Wednesdays and Saturday from 6 to 9, Sundays from 9 to 2.

You have to put up all your own ℞, you must see to everything, if I am not at home, you to write with machine and dictate a good letter. The composing of these letters is in itself very important. Of course you will also have to sign in the contract, that you have never been in my employ, and you never have a right to copy my prescriptions or to take addresses or names of patients, nor to open an office in Philadelphia or associate yourself with any one else or say I was formerly with so and so, using my name, nor can you practice outside of my office while in my employ, and you must be registered in Pennsylvania without fail.

The position is a good steady one for the right man in the right place; state the age, nationality, and what college you graduated from. In fact, to avoid unnecessary correspondence and time, send highest references, not from friends and patients, but from honorable citizens, who know your good as well as your faults.

Yours faithfully,

As the name of the individual who signed this remarkable effort was not to be found in any of the medical directories, further information was asked for, regarding the legal liability of the assistant. The reply defined the status of the assistant with clearness. Here it is:

MIAMI, FLA., March 5, 1907.

*Dear Doctor:*—My uncle for whom I write is Registered since '80 in Philadelphia and has practiced since 38 years in Philadelphia. Of course you are responsible as far as Patients goes if you poison any, but otherwise no Patient is taken without a Contract that relieves you and my uncle cure or no cure. Now what Uncle wants is a Honest Man strictly sober, good talker, a Man who will not take a Penny nor Hundreds but who Truly is Honest & of course Uncle Trusts none until he finds him Honest & so long will set Trapp to find it out. If you are the right man you get a good Place, if you are N. G. as I wrote before you're not worth a Penny to Uncle & if you are the right Man you will get your wages increased but don't Expect it in a Month or 3. You must show your value first & not Expect the Earth or after you find out you are the right Person say here I want the Earth. My uncle is O. K. all he wants is the Right Man. Send Photo & Ref. He has to decide quickly as my Cousin now takes care of office but my cousin is this Kind of a fellow He knows that he can run the office & wants the Earth, hence Uncle has to make a change.

Answer and act quick,

One more letter, thanking the nephew for his services as employment agent and suggesting that he send his uncle's name and address so that further correspondence might be carried on direct failed to elicit a reply.

Whether the doctor was able to get the honest man who didn't want "the earth" to take charge of his evidently lucrative practice and at the same time to fulfil the somewhat exacting requirements, all for the munificent sum of $70 monthly, we know not.

**Venesection in Acute Nephritis.**—Baccelli treats acute nephritis by withdrawing 200 c.c. of blood from a vein in the foot. In a typical case described in the *Policlinico*, xiv, 18, 1907, the edema of the lids, fever, blood, albumin and casts in the urine indicated severe nephritis a few days after the first stormy onset. The trouble in the kidneys causes lower arterial pressure with increased venous stasis and thrombosis in the finer ramifications of the veins with the glomeruli compressed and paralyzed. Venesection relieves these conditions as if by magic, and Nature then has a chance to heal. In the severer cases he follows the venesection with powders containing sodium sulphate, sodium nitrate and scammony, every five minutes. This stimulates the emunctories very powerfully, but the venesection alone generally aborts the nephritis and prevents its transformation into a chronic phase. In the severe acute case described the venesection was repeated the second day and recovery was soon complete.

## DEDICATION OF THE BARLOW MEDICAL LIBRARY OF LOS ANGELES.

George H. Kress, M.D.
LOS ANGELES.

The establishment of medical libraries is so desirable a need of the medical profession and at the same time so unusual an event, that every such occasion seems worthy of special mention and record. It is, therefore, with considerable pride that Los Angeles, now a city of 260,000 persons, and the metropolis and natural geographical, financial, social and literary center of that wonderful region known as "The Great Southwest," is able to announce to the world that the medical profession of that section has come into possession of a fire-proof medical library building and equipment costing more than thirty thousand dollars and that the institution starts its career of active work with more than five thousand volumes and publications.

For the generous gift of the building and equipment the medical profession is indebted to one of its own members, in fact to one of the younger members of the profession of Los Angeles—Dr. W. Jarvis Barlow, who occupies the chair of clinical medicine in the College of Medicine of the University of Southern California. Dr. Barlow gave the building without any restrictions, but in his honor it has been called the Barlow Medical Library by the board of trustees, who were elected by the members. The books with which the institution starts constituted the former library of the College of Medicine of the University of Southern California. The control of the institution is in the hands of the patron members, these being physicians who subscribe twenty-five dollars annually. As yet there is no endowment and the salary of the librarian and the expense of publications come from dues of patron members, annual members (ten dollars yearly) and of associate members (five dollars yearly).

The building has been erected within eight minutes' distance of the center of Los Angeles, opposite the buildings of the College of Medicine, so that it is accessible both to physicians and to the medical students of the city. The structure itself is virtually a single mass of cement, the architecture being dignified and handsome and the color tones most pleasing. In

addition to the general reading room there are a number of research rooms where physicians carrying on special investigations may leave books and papers without fear of having them disturbed. Light, ventilation and heating arrangements are most excellent.

The influence which this institution will have on the scientific tone and culture of the medical profession of the Southwest is inestimable. That it will be great and that its effects will be far reaching is not to be doubted. In conjunction with the Los Angeles County Medical Association, an organization that now holds weekly city meetings, in addition to maintaining sections in the specialties as well as supporting three branches in

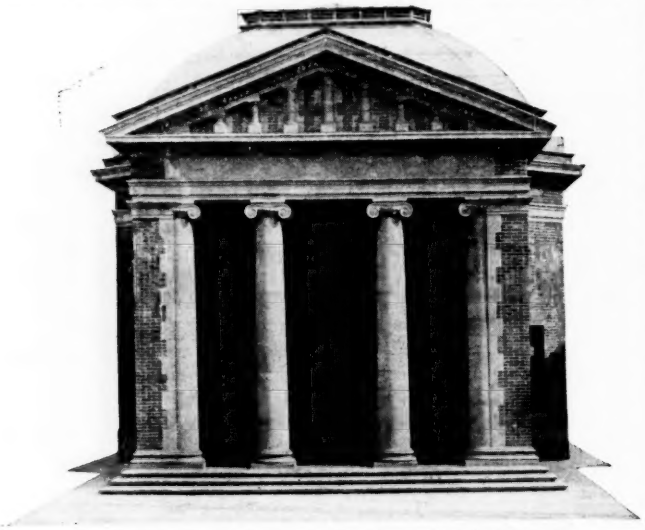

Fig. 1.—Front view of the Barlow Medical Library.

near-by towns, the Barlow Medical Library is bound to be a potent factor in the development of scientific progress and in the organization of the medical profession of the Southwest. The Los Angeles profession is grateful because of this new library and proud of the generosity displayed by one of its members in making this institution a reality.

An appeal is herewith made to medical librarians and to members of the profession elsewhere to aid in the work of increasing the volumes and publications now on the shelves of the in-

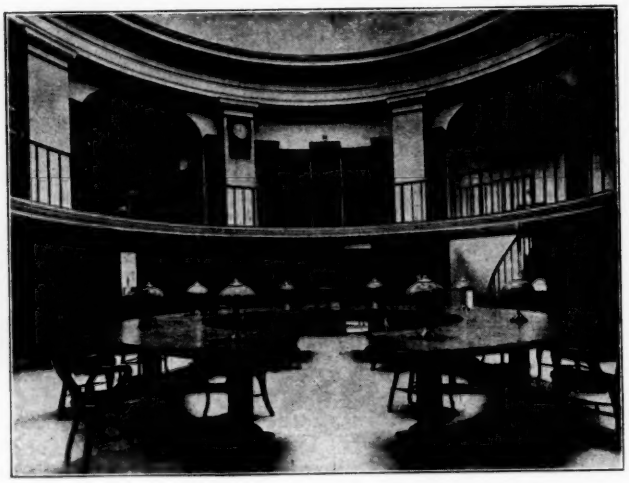

Fig. 2.—Interior view of the Barlow Medical Library.

stitution. Medical publications of any kind and reprints of medical articles will be gladly received. Lists of books or reprints may be sent to the librarian of the Barlow Medical Library, 740 Buena Vista street, Los Angeles, who will be glad to give detailed information concerning the needs of the institution.

The first board of trustees elected by the patron members consists of Dr. Milbank Johnson, president; Dr. Stanley P. Black, secretary, and Drs. George L. Cole, William A. Edwards, B. F. Church, John R. Haynes and Fitch C. Mattison. These men, on behalf of their fellow practitioners of the Southwest, request the cooperation and aid of the profession of other parts of the country in the work of which they are the custodians.

**Tumors of Cerebellum and Posterior Cranial Fossæ.**—The *Med. Klinik* publishes with its first number in 1907 a supplement containing an article by W. Seiffer presenting the present status of our knowledge on this subject. He explains the contradictory findings of various investigators as due to the more or less gradual development of the tumor. Of all the organs in the body the cerebellum seems to be able to benefit most from compensatory processes. A tumor developing slowly in the cerebellum exhibits entirely different symptoms from one that develops rapidly, without time for the compensating processes to be established. He urges careful record of the consequences of surgical treatment of such a tumor. Every operation of the kind is not only a life-saving measure, but is a most important contribution to the progress of science. The inoperable intrapontine tumors seldom cause choked disc or much headache, but spastic hemiparesis with exaggeration of the reflexes and Babinski's sign are frequent, also alternating hemiplegia, that is, paralysis of one or more of the cranial nerves on one side and of the extremities on the other. There is, further, frequently a total and permanent ophthalmoplegia (which is not total with tumors of the cerebellum), or bilateral spastic paresis of the extremities, sphincter disturbances (seldom observed with cerebellar tumors), eventually also hemitremor and hemianesthesia. Spitzer regards conjugated deviation of the head and eyes toward the sound side as the chief sign of an affection of the pons.

**Cost Increases with Purity.**—The argument that enforcement of the laws regulating the purity of milk will result in increased cost of the product to the consumer is not a valid one. The price is being advanced anyway. The law of supply and demand will settle that question, as it does all others in domestic and political economy.—*Louisville Monthly Journal of Medicine and Surgery.*

## Therapeutics

**[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]**

### Alopecia.

McKee, in the *Lancet-Clinic*, states that the first step is to cleanse the scalp and to remove some of the inflammatory exudates. The next step is to apply some antiseptic medication which should not only cover the scalp, but also penetrate into the hair follicles. Through this cleansing process and disinfecting the natural oil of the scalp will be removed and the third step consists in replacing it. Vaselin or lanolin in which some antiseptic has been incorporated is rubbed into the scalp daily for from one to six weeks, then every other day for a similar time, then twice a week, and then once a week.

Chrysarobin is one of the best remedies in this condition. It is best appplied in 6 per cent. ointment with vaselin or lanolin as a base. It is applied daily for a week or two, then discontinued to see if the progress of the disease has been checked. If lanugo hairs do not appear, or if the hairs in the periphery of the patch can be pulled out easily the treatment should be resumed. This remedy should not be used near the eyes. The author asserts that lactic acid, 50 per cent. in water or alcohol, gives good results. The affected parts are first freed from oil with alcohol or ether; then the remedy is applied on a swab till the skin becomes red. The following combination is useful:

| | | | |
|---|---|---|---|
| R. | Thymolis | ℥ss | 15 |
| | Olei ricini | | |
| | Olei amygdalæ dul., ää | ℥ii | 60 |
| M. | Sig.: Appply to the scalp. | | |

As recovery is often spontaneous, it is difficult to determine the exact value of the remedies used. Internally, arsenic, cod-liver oil and similar tonics should be given when indicated, in connection with regulation of the diet and physical and mental hygiene. To prevent baldness the following may be used:

| | | | |
|---|---|---|---|
| R. | Pilocarpinæ hydrochloridi | gr. v | 33 |
| | Olei rosæ | gr. viii | 50 |
| | Olei rosmarini | | |
| | Tincturæ cantharidis, āā | ℥ss | 15 |
| | Glycerini | ℥i | 30 |
| | Olei amygdalæ dul | ℥ii | 60 |
| | Spiritus camphoræ | 3xxiv | 96 |

M. Sig.: Rub well into the scalp night and morning.

In alopecia prematura, Stelwagon, "Diseases of the Skin," states that the patient's general health and the condition of the scalp must both be considered. Of general tonics he mentions arsenic, cod-liver oil, strychnin, iron and the hypophosphites. The external treatment is the essential part. In cases in which eczema seborrhicum or seborrhea is present, or is the cause of the alopecia, treatment must be directed against this alone, and when this condition is removed the usual applications in uncomplicated cases of loss of hair can be utilized. One of the most valuable remedies is resorcin, but Stelwagon warns against using this drug, except cautiously, for patients with white or gray hair, as it stains the hair, giving it a dingy yellow tinge. Stelwagon recommends the following:

| | | | |
|---|---|---|---|
| R. | Resorcini | 3i-ii | 4-8 |
| | Olei tiglii | m. iv-xx | 26-1.33 |
| | Olei ricini | m. x-xxx | 65-1.90 |
| | Alcoholis vel | | |
| | Spiritus myrciæ | ℥iv | 120 |

M. Sig.: Apply to scalp night and morning.

In alopecia areata Stelwagon advises giving arsenic internally, in the form of Fowler's solution, in doses of from 3 to 5 drops (0.2 to 0.33) three times daily. Nux vomica and the iron tonics are also of value. Locally he prescribes the following:

| | | | |
|---|---|---|---|
| R. | Sulphuris precipitātis | 3i-ii | 4-8 |
| | Beta-naphthol | gr. xxx-3i | 2-4 |
| | Adeps lanæ | ℥ii | 8 |
| | Petrolati liq. q. s. ad | ℥i | 30 |

Ft. unguentum. Sig.: Rub well into scalp once daily.

The remedial application should always be carried one-quarter or one-half inch beyond the border of the affected area.

If there are but two or three areas, Stelwagon states that the stronger remedies may be employed. Of these he recommends an ointment of chrysarobin, from 10 to 60 grains to the ounce of lard or vaselin, well and energetically rubbed in.

Hyde and Montgomery, "Diseases of the Skin," recommend the following formula:

| | | | |
|---|---|---|---|
| R. | Olei ricini | f℥ss | 15 |
| | Phenol (acidi carbolici) | 3i | 4 |
| | Tincturæ cantharidis | f℥ss | 15 |
| | Olei rosmarini | gtt. xv | 1 |
| | Alcoholis q. s. ad | f℥iv | 120 |

M. Sig.: Apply to the scalp.

Jackson has recommended a pomade made by boiling down a stated quantity of the fluid extract of jaborandi to one-half its volume and adding to this four parts of lard. This is rubbed into the scalp twice daily. Jackson also recommends a lotion of corrosive sublimate gr. 1½ (0.1) to the ounce of water, not on account of its parasiticide qualities, but solely on account of its stimulating effect.

All the preparations in common use in this condition possess both parasiticide and stimulating properties.

### Heroin Addiction.

Paul Duhem, in *Progrès Médicale*, calls attention to the fact that since the introduction of heroin, and especially since its employment in the treatment of morphin addiction, cases of heroin addiction have been observed in increasing numbers.

Duhem bases his conclusions on 16 cases of heroin addiction observed in connection with Sollier. Of these, three patients acquired the habit from the use of the drug for asthma, four were morphin habitués who had used heroin in the hope of cure, three had first taken the drug for pain, while in six others the use was traced to various causes, such as fatigue, overwork, insomnia and other nervous symptoms which were added to a neuropathic constitution. The doses which were used as a remedy for asthma and other respiratory affections as well as those used as a substitute for morphin were rather large, 3 to 22 grains (0.2 to 1.5), while when used as an analgesic the amount was somewhat less, ½ to 1 grain (3. to 5.).

The method of withdrawal of the drug was the same as that practiced by Sollier for the withdrawal of morphin: The patient is isolated and preparatory treatment instituted to stimulate the eliminative organs. Then the drug is withdrawn as rapidly as possible, ending in complete withdrawal in about a week, with constant supervision of the elimination; finally an abundant diet and tonic treatment are given. Contrary to the experience with morphin, it was found that to allow injections of heroin during the course of the withdrawal was accompanied by serious inconveniences. While morphin in minute quantity will restore a patient with slight cardiac defect, if he becomes prostrated during the withdrawal of morphin, patients addicted to heroin showed no such effect from injections of heroin. Duhem, therefore, concluded that it is best in case of heroin addiction to withdraw the heroin completely and to substitute morphin for it. This method suffices to prevent many accidents, but does not obviate the dangers altogether. The preference of heroin for the respiratory tract explains the frequency of attacks in which this function may be almost in abeyance. These attacks of respiratory failure occur in cases in which they may not be expected. From the moment of withdrawal the respiration and circulation are slowed and intellectual torpor is marked; there is marked sweating and a leaden type of countenance, but nothing indicates the imminence of the failure of respiration. The pulse is generally good, and if the countenance is not watched the attack may not be noticed until it is in full action. The breathing suddenly ceases, the face becomes pale, the eyelids tremble, the face becomes covered with a cold sweat and the patient loses consciousness. In addition to rubbing the limbs a double injection of ether and morphin should be given; the use of heroin is without effect in such a case. It is evident that heroin is removed from the system with much greater difficulty than morphin. The patients become very feeble and emaciate alarmingly. The normal functions are more slowly established and the convalescence is more tedious. While morphin users regain their lost weight at the latest at the end of the second week, those habituated to heroin require four weeks or more for the restoration of their original weight.

These considerations lead to the conclusion that morphin is to be preferred to heroin when an active narcotic is to be used, and that physicians should be on their guard against allowing patients to become habitual users of this drug on account of the greater injury which its habitual use entails and the greater difficulty presented in curing the patient of the degrading habit.

### Gastric Sedatives.

H. B. Sheffield, New York, calls attention to the fact that a highly irritated stomach will often reject even the most palatable medicine. Cracked ice, cold or hot water, calomel or bicarbonate of soda, peppermint, lime, or bitter almond water, small doses of bismuth and cerium oxalate, minute quantities of tincture of iodin well diluted in water, are all useful gastric sedatives. In continued vomiting of infants, lavage advantageously supplants drugging.

When administering medicines to infants, it is often helpful to divide the regular dose, giving it, if need be, drop by drop until the whole dose is consumed. In this manner the most irritable stomach will frequently retain the medicine when it would otherwise reject it.

Before prescribing any medicine the physician should always bear in mind the dictum: "What is hateful to thee, do not unto thy fellow-man."

# Medicolegal

### Duty Owed Injured Seamen.

The United States Circuit Court of Repeals, Third Circuit, says, in the case of The Mars, that the fact that a tug is engaged in comparatively short coast-wise trips does not relieve her from the usual obligations of a vessel to her crew. One of these is to furnish, at the vessel's expense, care and maintenance to a seaman injured in her service. The Osceola, 189 U. S., 175. This right extends to a fireman. The North America, 5 Ben., 486. The word "cure" is used in its original meaning of care and means proper care of the injured seaman and not a positive cure, which may be impossible. The Atlantic, Abb. Adm., 451. The duty is to furnish means of cure and to use all reasonable efforts for that purpose. Brown vs. Overton, Fed. Cas. No. 2024. In the nature of things the end of the voyage does not end the obligation, if there was not sufficient time and facilities for the vessel to have then done its duty. Its unfilled obligation may continue after the voyage ends. McCannon vs. Dominion Atlantic Company (D. C.), 134 Fed., 762; Henry B. Drake, 141 Fed., 191; The Svealand, 136 Fed., 109; Reed vs. Canfield, 1 Sumn., 195. Neither the ancient codes nor the modern decisions show any reasoning or authority for holding that, where the injury to the seaman in the performance of his accustomed duties, was received through remissness or not unusual carelessness on his part, he thereby forfeits his right to cure and maintenance. The Osceola; The City of Alexandria (D. C.), 17 Fed., 395; The Ben Flint, 1 Abb. (U. S.), 126.

### Good Case Made Against Illegal Practitioner.

The Supreme Court of Iowa affirms, in the case of the State vs. Kendig, a conviction of practicing medicine without a license. The indictment, found under Sections 2579 and 2580 of the Iowa Code, charged that "the said A. J. Kendig, on the 1st day of September, A. D. 1903, and from the said 1st day of September, A. D. 1903, until the time of the finding of this indictment, did, in the county of Madison and state of Iowa, falsely, wrongfully and unlawfully assume the duties of a physician and make a practice of prescribing and furnishing medicine for the sick, and did wrongfully, falsely and unlawfully publicly profess to cure and heal, without having first obtained from the board of medical examiners of the state of Iowa, and filed for record, a certificate conferring on him the right to practice, contrary to the statutes in such cases made and provided."

The indictment was challenged on several grounds, and, first, that it was not sufficiently certain as to the person charged, or as to the offense intended to be charged, in that the act or omission charged was not set forth with sufficient particularity. It was said that the indictment did not give the slightest information as to the time, place or circumstances of the offense, nor of the evidence the defendant would be required to produce to establish his defense. But the court holds that here the statutory definition of the crime was complete, and, as the indictment charged the defendant's offense in the language of the statute, it was sufficient.

Again, it was said that the indictment did not charge the defendant with prescribing medicine for, or practicing on, human beings, as distinguished from furnishing medicine for domestic animals. This objection, the court says, was purely hypercritical and without merit. According to the common understanding, as well as in law, there is a distinction between the practice of medicine and the healing of the sick and the treatment of diseased animals.

Nor does the court think that the indictment was insufficient in that it did not negative the exceptions contained in the statute, as that it shall not be construed to prohibit students from prescribing under certain conditions or gratuitous services in the case of emergency, etc. The court says that the general rule as to exceptions, provisos, and the like is that where the exception or proviso forms a portion of the description of the offense so that the ingredients thereof can not be accurately and definitely stated if the exception is omitted, then it is necessary to negative the exception or proviso, but, where the exception is separable from the description and is not an ingredient thereof it need not be noticed in the accusation; for it is a matter of defense.

That there was ample testimony to justify the verdict returned, the court explains by saying that there was no doubt that the defendant was visiting the sick, diagnosing their ailments and furnishing medicines for their cure. Not only this, but he filed claims against the estates of some of his patients for medical services rendered and asked the county to recompense him for treating a "county charge." The statute, the court further says, was intended to cover the advertising and selling of all medicines except those known as "patent" or "proprietary," and there was no testimony that the medicines which the defendant was vending belonged to either of these classes. Moreover, the defendant was not merely selling certain preparations, but he was visiting the sick and prescribing them for his patients.

### By Whom Statutory Privilege May be Waived.

The Supreme Court of Minnesota says, in the case of Olson vs. Court of Honor, that Section 5662, Subdivision 4, of the General Statutes of Minnesota of 1894 provides that "a regular physician or surgeon can not, without the consent of his patient, be examined, in a civil action, as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." It is manifest that the purpose of the statute is to protect the patient, and not his adversary; for the evidence may be received with the consent of the patient.

Does this privilege become absolute on the death of the patient, or may those who represent him or claim an interest under him after death waive the privilege for the protection of such interest? This is an important question; for if they can not waive the privilege given by the statute, and their adversary may invoke it to suppress the truth and defeat the enforcement of rights the deceased provided for them in his lifetime, then the statute may be made an instrument for cheating justice. If such be the proper construction of the statute, then, if an executor or legatee presents a will for probate, which is contested on the ground that the testator was of unsound mind when the will was made, the executor or legatee may not, if the contestant objects, call the physician who was attending the testator at the time to testify as to his knowledge of the patient's mental condition, acquired in attending him. Nor could the personal representatives of a party, in an action to recover damages on account of the death of his intestate by the alleged negligence of the defendant call the physician who attended the intestate after his injury to testify as to the nature of the injuries and the cause of death, if such information was acquired in attending him.

Again, the case under consideration, the court says, illustrates the unreasonableness of such a construction. The defendant insured the deceased for the benefit of her husband and children against death by unintentional self-destruction while under treatment for insanity. The best, and perhaps the only, evidence to prove that the deceased was under treatment for insanity at the time of her death was the testimony of the physician. Yet, if the statute was to be construed as the defendant claimed, then the plaintiffs, who were asserting a right under the deceased which provided for them in her lifetime, might not waive the privilege; but the defendant might invoke it to defeat the enforcement of their right. It can not be that such is the proper construction of the statute, for it is unreasonable and unjust.

The adjudged cases, however, relevant to this question, are not in entire harmony, due, perhaps, to a difference in the wording of the several statutes construed. On principle and what seems to be the weight of judicial authority, this court holds that the statute in question is for the protection of the patient, and he may waive the privilege if he sees fit, and that, as a general rule, those who represent him after his death may also waive the privilege for the protection of interests which they claim under him. In re Will of Layman, 40 Minn., 371; Coates vs. Semper, 82 Minn., 460; 23 Enc. of Law, 90; Denning vs. Butcher, 91 Iowa, 425; Winters vs. Winters, 102 Iowa, 53; Grand Rapids Ry. Co. vs. Martin, 41

Mich., 667; Scripps vs. Foster, 41 Mich., 742; Fraser vs. Jennison, 42 Mich., 207; Groll vs. Tower, 85 Mo., 249. It follows that the evidence of the physician in this case was competent.

**Insanity at Time of Trial and Expert Testimony.**

In the United States Circuit Court in Alabama, in United State vs. Chisolm, an inquiry as to the sanity of a prisoner, the jury were told, among other things, that finite man at last gropes but darkly into the conditions of the human mind, and it is impossible for any court to lay down any fixed rule, as a matter of law, as to any particular state of facts which will unerringly demonstrate sanity, or the contrary condition of the human mind, or the degree of aberration which, when found to exist, exempts an accused person from criminal responsibility, or unfits him to rationally aid in his defense when arraigned for crime.

But whether or not an individual's departure from general rules governing human action demonstrates such aberration of mind as exempts him from criminal responsibility, or shows unfitness on that account to be placed on trial, depends on the circumstances of the particular case, and is to be gathered not merely from the act for which he is arraigned, but must also be determined and tested in view of every other fact and circumstance which sheds light on the condition of the defendant's mind at the period as to which the inquiry is directed. Each particular case, therefore, presents a practical question, in the decision of which general tatements of the theories of medical men and the reasoning of jurists furnish only partial, and sometimes little, if any, practical help.

A person may be insane or partially so at one time, and subsequently be restored to sanity, and afterward be a responsible being in the eyes of the law. The reason why an insane person, or one who, though not insane, is laboring under such mental infirmity as to prevent his rationally aiding in his defense, should not be put to trial, is, in the language of the old books, "because he is disabled by the act of God" from making a just defense if he has one, and "because there may be circumstances lying in his private knowledge which would prove him innocent or his legal irresponsibility, of which he can have no advantage, because they are not known to persons who undertake his defense." Nevertheless, a person though not entirely sane, may be put on trial in a criminal case if he rightly comprehends his own condition with reference to the proceedings, and has such possession and control of his mental powers, including the faculty of memory, as will enable him to testify intelligently and give his counsel all the material facts bearing on the criminal act charged against him and material to repel the criminating evidence, and has such poise of his faculties as will enable him to rationally and properly exercise all the rights which the law gives him in contesting a conviction.

The defense of insanity, or mental inability to properly conduct a defense, is frequently resorted to without any just basis, and in passing on such questions the jury may give that consideration such weight as in their opinion it may deserve in connection with all the facts in the particular case. It would be a reproach to justite if a guilty man escaped the penalty for a crime on a feigned mental irresponsibility, or postponed his trial on a feigned condition of mind, as to his inability to aid in his defense. On the other hand, it would be likewise a reproach to justice and our institutions if a human being "made in God's own image," while suffering, as the old books put it, "under a visitation of God," were compelled to go to trial when he is not sufficiently in possession of his mental faculties to enable him to make a rational and proper defense. The latter would be a more grievous error than the former; since in the one case an individual would go unwhipped to justice, while in the other the great safeguards which the law adopts in the punishment of crime and the upholding of justice would be rudely invaded by the tribunal whose sacred duty it is to uphold the law in all its integrity.

The jury is not bound by the opinions of experts. If the jury's common sense, reason, judgment and observation, in view of all the evidence, produce the conviction in its mind that the expert is wrong in his opinions and conclusions, it may be governed by its own opinion and not by his. A jury should not capriciously or recklessly disregard the advice of medical men of experience in dealing with diseases of the human mind, and the advice of physicians as to such matters should be carefully weighed, but the final responsibility in arriving at a decision as to the mental condition of the prisoner rests on the jury. In this case all of the testimony of the medical experts seemed to agree that the prisoner had neurasthenia. One of them gave the opinion that he was suffering from incipient paresis. The name of the mental disease, if the prisoner was, in fact, suffering from such disease, was not important.

In the absence of any proof on the subject, the law presumes that every ordinary being of mature age is responsible in all respects, and the government in prosecuting a defendant for crime is not bound to offer any evidence on that point, but may rest on the presumption. When, however, any facts are developed which go to rebut the presumption of responsibility, it becomes a question of fact in the particular case. While the force of the presumption of innocence until guilt is found beyond a reasonable doubt has no field of operation whatever in solving such an issue as that now submitted, yet the humanity of the law is such that no man should be considered a proper subject for criminal prosecution, of whose ability to fairly and rationally make a defense there is just ground for reasonable doubt in the minds of the judge or jury which passes on that issue.

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# *Current Medical Literature*

## AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

### Medical Record, New York.

*March 23.*

1 *Fracture Dislocation of Spine. S. Lloyd, New York.
2 *Pathologic Changes in Fracture Dislocations of Spine. P. Bailey, New York.
3 *Treatment of Fracture Dislocations of Spine. I. S. Haynes, New York.
4 *Phototherapy in Nervous Disease. A. D. Rockwell, New York.
5 *Early Mobilization of Patients After Major Gynecologic Operations. A. Brothers, New York.
6 *Prognostic Value of the Diazo Reaction in Tuberculosis. J. R. Williams, Greensboro, N. C.

1. **Fracture Dislocation of Spine.**—Lloyd reviews the clinical history of fracture dislocation of the spine, and many of his views in regard to the treatment of his condition agree with those held by others. His previous papers on the same subject cover the ground fully. He has now performed laminectomy 32 times, and while some of his cases have improved to a marked degree, a very considerable number have shown absolutely no benefit from the operation. In none of the cases does he attribute the improvement to regeneration. He says that if regeneration of the cord does occur, more improvement would have followed in some of the cases in which no benefit was manifested. He says it is more than likely that there have been nerve fibers that were not destroyed and that have recovered their function, allowing for a more or less considerable improvement in the patient's condition. Spinal regeneration in the human species has not been proved, and, therefore, it is fallacious to hold out this hope to the patient.

2. **Id.**—Bailey agrees with Lloyd in the matter of regeneration of the spinal cord. He says that in one-third of the fracture dislocations of the spine, the cord escapes all injury. This is especially true in the cervical region. He says that the damage to the cord is that which takes place at once. Bailey does not believe that long-continued pressure has much to do with it, since, if severely injured, the cord shrinks, and there is still space in the canal to hold it.

3. **Id.**—Haynes says the treatment under the expectant plan consists of extension and immobilization with a plaster jacket. If there is no evidence of cord injury and the injury is not in the thoracic region, replacement may be done without cut-

ting. But if the injury is in the thoracic region, or the cord is involved, it will be necessary to cut down on the laminæ and spinous processes, open the canal, remove detached pieces of bone, or clots, arrest hemorrhage, and give drainage. Even if the cord is not involved at first, unless an immobolizing apparatus is used, slipping of the vertebræ may cause or increase the injury of the spinal cord.

Haynes believes that, even if we can not diagnose the exact injury to the cord we should promptly open the canal and give the patient the benefit of the doubt, since pressure for some days will make permanent an injury that might be relieved by early operation. Even when the cord has been entirely severed, a sort of repair goes on which improves the condition of the patient and enables him to live, while without repair death ensues under a year.

4. **Phototherapy in Nervous Diseases.**—Rockwell claims that, as a rule, whenever and wherever pain exists, whether in the form of the neuralgias or neuritis, or pain of the rheumatic or gouty type, a judicious application of the light bath is pretty certain to give temporary relief, and successive applications, in a large proportion of cases, are followed by permanent relief. In the toxemias and the toxic neuroses the therapeutic value of light energy is beyond question. The benefit derived from the light bath is often greatly enhanced by supplementary physical methods, such as static high frequency currents and general faradization.

5. **Early Mobilization After Gynecologic Operation.**—Brothers sums up his views as follows: Early mobilization tends to overcome ordinary vomiting, accumulation of intestinal flatus, and bronchial irritation from retained secretions in the air passages. Instead of contributing additional risks to the possibilities of thrombosis and embolism in the absence of septic infection, the early moving about of these patients actually tends to reduce these risks. The morale of these patients is always wonderfully improved. The total result is an earlier and more pleasant convalescence. Brothers cites a number of cases in support of his views.

6. **Diazo Reaction in Tuberculosis.**—Williams always makes a careful and complete urinary analysis of every case of pulmonary tuberculosis, and the diazo reaction is one thing in particular that he always looks for, believing its presence or absence a valuable prognostic sign. He says that the absence of the reaction in white patients is of favorable prognostic value. In the colored patient, the absence of the reaction is of no prognostic value. The presence of the diazo reaction in white patients is of unfavorable prognostic value. Williams says that not only the fresh specimen of urine should be examined, but also one which had stood for twenty-four hours.

### Boston Medical and Surgical Journal.

*March 21.*

7 *Subdeltoid Bursitis. C. F. Painter, Boston.
8 *Surgery of the Right Upper Abdominal Quadrant. F. B. Lund, Boston.
9 *Practical Considerations in Treatment of Neurasthenia. W. C. Canfield, Bristol, R. I.
10 Studies in Psychopathology. B. Sidis, Brookline, Mass.
11 New Obstetric Forceps. F. L. Good, Boston.
12 Progress in Theory and Practice of Medicine. H. A. Christian, Boston.

7. **Subdeltoid Bursitis.**—That traumatism in one form or another is the usual cause of subdeltoid bursitis is shown by the four cases reported by Painter. He says that the most common injury producing this condition is a fall on the shoulder or a violent twist or wrench of this articulation. Painter believes that the treatment of all these cases should consist in open incision and removal of the entire sac irrespective of the duration of the case or the cause of the condition. The after-treatment, which is begun within a week or ten days, consists of passive motion and hot fomentations to the shoulder. Painter found that the prognosis is better after the open method of treatment than after simple manipulation. Convalescence is also much shortened and the functional results are considerably better.

8. **Surgery of Right Upper Abdominal Quadrant.**—Lund emphasizes the advantage of early operation in diseases of the stomach, gall bladder and pancreas and the imperativeness of early operation in perforations. He says that present diagnostic methods are inadequate, and therefore the surgeon must hold himself in readiness at all times to meet conditions different from those suspected before operation.

9. **Treatment of Neurasthenia.**—In the treatment of neurasthenia, Canfield considers it wise to begin at once with physical therapeutics, consisting of isolation, rest, over-feeding, and exercise. These remedial measures are followed up by psychotherapeutics.

### New York Medical Journal.

*March 23.*

13 *Essentials in Crusade Against Tuberculosis. L. F. Flick, Philadelphia.
14 Historical Sketch of the Development of Percentage Feeding. T. M. Rotch, Boston.
15 *Physical Processes of Immunity and Infection. J. Wright, New York.
16 *Behavior of Eosinophile Leucocytes in Pulmonary Tuberculosis. J. M. Swan and H. T. Karsner, Philadelphia.
17 Essentials for Success in Medicine. C. E. Nammack, New York.
18 *Aural Affections in Relation to Mental Disturbances. W. S. Bryant, New York.
19 Pasteurization: Advantages and Disadvantages to Consumer. R. G. Freeman, New York.
20 *Use of Ammonia in Counteracting Fumes of Formaldehyd. E. V. Wilcox, Washington, D. C.

13. **Essentials in Crusade Against Tuberculosis.**—The essentials in the crusade against tuberculosis are enumerated by Flick as follows: 1. The control of contagion. 2. The disinfection of infected places and things. 3. Life in the open air. 4. Proper food. He says that so far as possible the work in a community should be led by private effort and supported by the government. Education and the value of fresh air and proper food should be inaugurated everywhere and carried on in the school room, in the press, and on the platform. He urges the establishment of sanatoria and convalescent farms for consumption, although he considers the hospital the most efficient for the prevention of tuberculosis as it removes patients from the community during the period when the disease is in its most contagious form.

15. **Physical Process of Immunity and Infection.**—This is the third paper by Wright on this subject. In it he discusses the electro-dynamics of the surfaces of living protoplasm.

16. **Behavior of Eosinophiles in Pulmonary Tuberculosis.**—Swan and Karsner present further evidence of the behavior of the eosinophile leucocytes in cases of tuberculosis, with special reference to the prognostic value of these cells found in the peripheral blood. Differential counts of the leucocytes in the blood of 31 cases of pulmonary tuberculosis were made. Of this number, 26 cases were fatal and five were stationary, or were improving under treatment at the time the observations were discontinued. In all the fatal cases except two the eosinophile cells were below 1 per cent. as a rule, at periods varying from 102 days before death to the day of death. In the cases which remained stationary or which were improving under treatment the eosinophiles, while subject to fluctuations, were present in fair proportion, usually over 1 per cent. The authors conclude from their observations that in cases of pulmonary tuberculosis the eosinophile cells tend to disappear from the circulating blood as the progress of the disease brings the fatal termination nearer, and that as the patient improves under treatment and as the disease shows a tendency to become arrested, the eosinophile cells reappear in the circulating blood. A full report of the cases studied is appended to the paper.

18. **Ear Disease and Mind Disease.**—The results of Bryant's experience in examination of the ears of the insane have convinced him that ear disease is much more prevalent among the insane than among the sane. In fact, it is the exception not to have some demonstrable functional disturbance of the ear. Bryant found it present in 90 per cent. of the insane examined. In many of these cases a history was obtainable which showed that the ear disease was in existence before the insanity appeared, and in others the condition of the ears was such that it must have antedated the mental disturbance.

20. **Ammonia to Counteract Fumes of Formaldehyd.**—Wilcox subscribes to the value and efficiency of using ammonia for the purpose of neutralizing formaldehyd. In fumigating a sick room containing 1,500 cubic feet of space, two quarts of methyl

alcohol were consumed in a formaldehyd generator, and in addition three pounds of commercial formaldehyd were exposed on the sheets. As soon as the room had been ventilated sufficiently to make it possible to work in it, one and one-half quarts of ammonia were sprinkled over the rugs and bedding, and the room was closed again. About the same proportion of ammonia was used throughout the other rooms of the house where the quantity of formaldehyd generated had been relatively somewhat less. The formaldehyd fumes were completely destroyed within one-half hour, and the odor could not be detected in any part of the house except where formaldehyd had been spilled on the floor and had left an incrustation of paraform on the woodwork. As soon as these spots had been treated with ammonia the odor of formaldehyd disappeared entirely.

### Lancet-Clinic, Cincinnati.

*March 23.*

21 The Good of the Profession. F. W. Langdon, Cincinnati.
22 Further Studies in Nasal Therapeutics. J. A. Thompson, Cincinnati.
23 *Primary Syphilis of Lips and Tonsils. A. B. Thrasher, Cincinnati.
24 Entoning of the Neurones in the Practice of Medicine and Surgery. C. H. Hughes, St. Louis.

23. **Primary Syphilis on Lips and Tonsils.**—Four cases of innocently acquired syphilis are reported by Thrasher, not because the cases are unique, but solely for the purpose of directing attention to the fact that such cases occur far more frequently than is usually supposed. In two of the cases the tonsil was affected and in the remaining two the lesion was situated on the lip.

### St. Louis Medical Review.

*March 16.*

25 *Causation of the Waste of Infant Life. B. Joll, London, Eng.
26 Medical Education in Paris. C. G. Chaddock, St. Louis.
27 Medical Education in London. L. Williamson, St. Louis.

25. **Waste of Infant Life.**—According to Joll, the chief causes of the waste of infant life are improper feeding, insanitary surroundings, ignorance of parents, and immorality.

### Annals of Surgery, Philadelphia.

*March.*

28 *Sarcoma of the Long Bones. W. B. Coley, New York.
29 *Successful Anterior Thoraco-bronchotomy for a Foreign Body Impacted in Bronchus. F. A. Goeltz, Erie, Pennsylvania.
30 *Surgical Treatment of Empyema. S. Lloyd, New York.
31 *Cysts of the Omentum. R. E. Fort, Nashville Tenn.
32 *Tuberculosis of the Bladder. G. Walker, Baltimore.
33 *Drainage of Knee Joint in Severe Infections by the Transverse Incision. C. H. Peck, New York.
34 *Diffuse Cavernous Angioma of the Upper Extremity. A. P. C. Ashurst, Philadelphia.
35 *Fracture of Coracoid Process of Scapula Caused by Muscular Action. O. H. Petty, Philadelphia.
36 *Glanders in Human Subject. J. T. Pilcher, New York.

28. **Sarcoma of Long Bones.**—The diagnosis, treatment and prognosis of sarcoma of the long bones are discussed by Coley, and he reports 69 cases. The great majority of his cases were treated by the routine methods now in vogue, namely, high amputation or exarticulation at the proximal joint. He has resected in no case. He performed amputation at the hip joint eight times without mortality, but four of the six patients in whom it was performed for sarcoma of the femur died within the year; the fifth in one and one-half years, and the sixth was not traced. In two the amputation was done for sarcoma of the soft parts. One patient died a year later and the other, who had received several months' treatment with the mixed toxins prior to amputation, now remains well after a period of six years. Coley has seen six cases of sarcoma in patients under ten years of age; one, a sarcoma of the humerus in an infant twenty months old, and four of the femur in patients aged seventeen months, six, seven, and nine years respectively. Amputation was done in 2 cases; disarticulation in 16; resection in 6, and in 29 no operation was done. Coley believes that the use of the mixed toxins of erysipelas and bacillus prodigiosus after operation will greatly widen the limits within which the operation of resection may be employed safely, even in the cases of more malignant sarcomas. All the cases are reported in full.

29. **Anterior Thoraco-Bronchotomy.**—In the case reported by Goeltz a metal collar button was inspired and lodged in the right bronchus. It was impossible to remove the button, except by operation—thoraco-bronchotomy—and this was done successfully. Forty-eight hours elapsed between the inspiration of the button and its removal.

30. **Surgical Treatment of Empyema.**—In the method employed by Lloyd the opening in the chest is made in the usual way, the pleura is incised, and the accumulated fluid is allowed to drain away gradually at first. Ether is the anesthetic employed, and before opening the pleura the anesthetic is stopped in order that there may occur a sudden expansion of the lung, and that during the remainder of the operation the patient may be coming from under the effects of the anesthetic gradually. As soon as the fluid is drained away, the opening in the pleura is made sufficiently large to permit of thorough exploration of the pleural cavity and to locate the position of the collapsed lung. While the adhesions are being severed with the finger the patient begins to cough, owing to the sensitiveness of the pleura, and with each forced expiration expansion of the lung takes place until finally the lung fills the pleural cavity. Lloyd employs a drainage tube, which in appearance is similar to a spool. He has operated in 225 cases by this method. Of these, 97 patients were cured, 58 were improved, and 47 died (including the deaths from all causes and for all periods of time after the operation).

31. **Cyst of Omentum.**—Fort discusses 21 previously recorded cases of cysts of the omentum and adds one personal case.

32. **Tuberculosis of Bladder.**—In this paper Walker discusses the differential diagnosis, the prognosis and the treatment of tuberculosis of the bladder.

33. **Drainage of Knee Joint.**—Peck believes that drainage of the knee joint by the transverse incision has not received the attention it deserves. He says that the operation should not be employed in mild or early cases in which there is hope of recovery with some preservation of joint function, drainage and irrigation through multiple incisions being preferable. He insists that a distinction should be drawn between cases in which the crucial ligaments are preserved and straightening the limb without resection, resuturing the patella or its ligament and preserving some degree of function is the end in view, and in the severer cases where avoidance of amputation or death from sepsis are the sole considerations. He maintains that in the latter class of cases the complete operation is of great value and should, as a rule, be followed by resection as a secondary procedure, except in children. Flexion of at least 45 per cent. on a suitable splint is essential. The secondary operation should not be performed until suppuration has ceased, surfaces are cleanly granulating, and temperature is practically normal.

34. **Diffuse Cavernous Angioma.**—Ashurst adds one case to 11 other cases recorded in the literature. His patient was a little girl, 12 years of age, the tumor being situated on the extensor surface of the forearm just above the wrist. The front of the thorax on the right side was the seat of a nevus composed of dilated capillaries, and below the angle of the right scapula was a mass the size of a walnut. Similar masses were palpable in several other localities.

35. **Fracture of Coracoid Process of Scapula.**—Petty reports a case of fracture of the coracoid process of the scapula in a powerfully muscled man, 57 years of age. The shoulder was treated by dressing the arm in the Velpeau position, which subsequently had to be changed on account of the inconvenience it was causing, and the right arm was bound to the side of the patient, leaving his forearm free. Later, light massage and passive motion were employed. At the end of the seventh week the patient was still unable to raise his right arm above his head.

36. **Glanders.**—Pilcher presents a detailed report of two cases of glanders occurring in the human subject. In one case the infection is believed to have occurred through inhalation and in the other case through a scalp wound. Both cases terminated fatally. In one case the incubation period was 25 days, and the other only 5 days. In both cases the striking feature was the fact that the degree of prostration was greatly out of proportion to the physical signs. There was early involvement of the larger joints of the body.

### The Post-Graduate, New York.

*February.*

37 *Urea: Uric Acid Ratio. W. H. Porter, New York.
38 Case of Monocular Hysterical Amblyopia. D. B. St. J. Roosa, New York.
39 Systematic Treatment of Syphilis. W. S. Gottheil, New York.
40 Syphilitic Lesion of Eyelid. J. Pederson, New York.
41 Case of Rachischisis. P. Horowitz, New York.
42 Value of Cystoscopy in Gynecology. H. D. Furniss, New York.
43 Surgical Treatment of Empyema. S. Lloyd, New York.

**37. Urea: Uric Acid Ratio.**—After a very careful study of the exact ratio between the output of urea and uric acid, Porter concludes that no fixed standard of proteid intake has been established and that no fixed composition of the urine exists. The main point to be determined is the amount of uric acid produced because it is a positive index to one form of suboxidation. Securing all the urinary analyses possible from different sources, adding them together and striking an average, gives a fair standard of nitrogen output by the kidneys. A similar method applied to the hepatic secretion and to other secretions and excretions gives the total daily output of nitrogen from the system. Securing the total output of nitrogen determines the amount of food that must be ingested and assimilated to insure the full quota of nitrogen in the excreta, etc. Uric acid must be classed both as a secretion and as an excretion, and in both instances represents proteid utilization. Porter says that faulty action of the liver often causes the toxic symptoms commonly classed as uremic, and especially so when there is an excessive elimination of nitrogen through the kidneys.

### Denver Medical Times.

*February.*

44 *Traumatic Appendicitis with Report of Case. H. A. Black, Pueblo, Colo.
45 *Case of Cleft Palate. T. E. Carmody, Denver.
46 Roentgen-Ray Findings in Sarcoma of the Femur. S. B. Childs, Denver.
47 *Perforating Gastric Ulcer. F. L. Dixon, Denver.
48 *Simple Method of Controlling Hemorrhage in Certain Cases of Cesarean Section. C. K. Fleming, Denver.
49 *Massage of Heart in Death from General Anesthesia. L. Freeman, Denver.
50 Appendicitis with Unusual Symptoms. H. G. Harvey, Denver.
51 Amputation of the Penis. P. Jaffa, Trinidad, Colo.
52 Uterus Bifida Unicervicalis with Pyosalpinx, Cystic Ovaritis and Adherent Appendix. N. A. Johanson, Denver.
53 *Mammary Sarcoma. G. W. Miel, Denver.
54 Gunshot Wound of Femur, Non-Union, Resection with Suture of Fragments, Cure. C. A. Powers, Denver.

**44. Traumatic Appendicitis.**—Out of 129 cases of appendicitis Black found three in which trauma was the direct cause, and one in which it served as an exciting agency. In the first three cases there was no history obtainable which in the slightest would suggest previous trouble with the appendix.

**45. Cleft Palate.**—Carmody reports a successful operation for cleft palate done on a young lady, 19 years of age. The Brophy operation was the one employed.

**47. Perforating Gastric Ulcer.**—In the case reported by Dixon the perforation occurred in the anterior wall of the stomach. It was closed with catgut sutures, 28 hours after perforation had occurred. The case was interesting further because of the absence of many symptoms which typical cases of gastric ulcer offer, if not usually present previous to perforation.

**48. Controlling Hemorrhage in Cesarean Section.**—The following plan of controlling hemorrhage under certain conditions was employed by Fleming: After having made the usual incision in the uterus the placenta was discovered attached to the anterior wall. In attempting to detach it so as to enter the cavity through the membranes, it was found that not only the placenta but the membranes were firmly adherent to the uterus. It then became necessary, in order to quickly deliver the fetus, to go directly through the placenta, which was done and the fetus delivered, cord cut between two forceps and the child handed to an assistant. The hemorrhage at this time was very profuse, both from the placenta and the incised uterine wall. The assistant could but partially control it by the usual method of pressure on the broad ligaments. Fleming grasped the uterus with both hands and quickly and easily inverted it through the incision, when the hemorrhage ceased immediately, after which the placenta and its membranes were carefully separated and removed, the uterus replaced and sutured.

**49. Massage of Heart.**—Freeman reports one instance in which massage of the heart failed to revive the patient, a woman 38 years of age, who was being operated on for obstruction of the common bile duct by gallstones. The patient had been jaundiced severely for months and the operation was one of necessity rather than choice. She stopped breathing as soon as the abdomen was opened but was resuscitated by means of prolonged artificial respiration. Strychnin was used and physiologic salt solution was injected during the operation. While the wound was being sutured the patient's breathing again ceased. Artificial respiration, continued for ten minutes, resulted in failure. Meanwhile the cardiac impulse had stopped and heart massage was resorted to, but also proved ineffective.

**53. Mammary Sarcoma.**—Miel cites a case of sarcoma of the breast occurring in a colored girl, 16 years of age. The tumor was removed and after six years there is no evidence of recurrence.

### Utah Medical Journal.

*February.*

55 Inguinal Hernia and Its Relation to Corporations. J. F. Critchlow, Salt Lake City.
56 Mental and Moral Delinquencies in the Degenerate or Feeble minded. W. B. Ewing, Salt Lake City.

### St. Louis Courier of Medicine.

*February.*

57 *Conditions Experienced in Cases of Ordinary Labor That Have Caused Me at Times Considerable Discomfort. F. Reder, St. Louis.
58 *Acute Fever in Childhood, Usually Incorrectly Diagnosticated. J. Zahorsky, St. Louis.
59 Treatment of Goiter. H. N. Chapman, St. Louis.

**57. Complications of Labor.**—The conditions discussed by Reder are unusual rigidity of the soft parts, a want of correspondence of axis caused by obliquity of the uterus, and a mechanical obstruction of the os by a scar, the result of a trachelorrhaphy performed five years previously.

**58. Acute Fever in Childhood.**—Zahorsky refers to an acute infection of the urinary tract, occurring especially in girls, which gives rise to an acute fever of varying duration and intensity and which is often overlooked. He has seen nine cases. The fever resembles that of typhoid, but it is dependent on an infection of the urinary tract. A remarkable feature of these cases is the slight disturbance of the bladder.

### American Medicine, York, Pa.

*February.*

60 *Orchitis in Typhoid. N. B. Gwyn, Philadelphia.
61 *Pre-icteric Itching. D. Riesman, Philadelphia.
62 Nervous Disorders of Children: Their Relation to School Life and Work. J. Punton, Kansas City, Mo.
63 Chronic Appendicitis. W. H. Morrison, Philadelphia.
64 Rupture of Colon from Violent Peristalsis Probably Induced by Fecal Impaction. G. W. McCaskey, Fort Wayne.
65 Treatment of Cardiac Dilation in Pulmonary Tuberculosis by Means of Artificial Nauheim Baths. G. W. Norris, Philadelphia.
66 Bilateral Malignancy of Ovaries. L. J. Hammond, Philadelphia.
67 *Medicines and Means for Control of Postpartum Hemorrhage. J. S. Raudenbush, Philadelphia.
68 Thrombosis of the Superior Mesenteric Artery with Hemorrhagic Infarction and Perforation of the Ileum. J. Funke, Philadelphia.
69 *Congenital Fetal Malformation. C. S. Barnes, Philadelphia.
70 Seven Years with Home Treatment of Tuberculosis in Private Practice. J. B. Martin, Lynn, Mass.
71 Purulent Meningitis with Meningococcus Intracellularis. A. Gordon, Philadelphia.
72 Tests of Water by Bacterial Inoculation. O. A. Johannsen, Ithaca, N. Y.

**60. Orchitis in Typhoid.**—Gwyn reports two cases of typhoid in which orchitis was a complication. In the first case the onset of the orchitis was marked by a severe abdominal pain in the appendiceal region, with marked distension, slight rising pulse and temperature, but no leucocytosis, muscular rigidity or signs of collapse suggesting perforation. Following this the testis on that side became enlarged. The swelling subsided quickly, the pain disappearing by the fourth day. This case is of interest in that it gives another clue to the origin of some cases of abdominal pain in typhoid. In the second case the orchitis occurred during the fifteenth week. The pain in the testis and groin was most severe, the gland rapidly swelled to the size of a goose egg; constitutional disturbance was marked. After a week the organ suppurated and the abscess broke through the scrotum. Gwyn says that evidently this was a case of direct typhoid infection in the testis.

61. **Pre-Icteric Itching.**—Riesman reports three cases of jaundice in which itching was the first symptom, showing that the itching is not due to a deposit of bile pigment in the skin, but in all probability is caused by some metabolic poison. Riesman suggests that when itching exists for which no cause can be found, the liver as a possible factor should not be overlooked. He says that pre-icteric itching is suggestive, though not pathognomonic of the existence of malignant disease involving the liver or the biliary pasages.

67.—See abstract in THE JOURNAL, Jan. 13, 1906, page 149.

69. **Congenital Fetal Malformation.**—In the case reported by Barnes two inches of the duodenum were replaced by a small impervious fibrous cord. Below this cord the intestine was abnormally small for a short distance and then shaded into a normal bowel. The child died of exhaustion at the end of 72 hours.

### Buffalo Medical Journal.

*February.*

73 *Infantile Scurvy. C. W. M. Brown, Elmira, N. Y.
74 Plea for Earlier Diagnosis of Appendicitis. A. L. Beahan, Canandaigua, N. Y.
75 *Prevention of Tooth Decay. F. W. Low, Buffalo.
76 Case of Cerebral Abscess, Operation, Death. L. W. Rose and R. G. Cook, Rochester.
77 Fracture of Skull, with Complications. A. M. Rooker, Buffalo.

73. **Infantile Scurvy.**—Brown gives the histories of five cases of infantile scurvy observed by him. One of the cases terminated fatally.

75. **Prevention of Tooth Decay.**—Low discusses briefly the report of the committee on scientific research of the New York State Dental Society in which is recommended the administration of potassium sulphocyanate in one grain doses, before retiring at night, for the prevention of tooth decay. This commission found that in mouths where rapid and general decay of the teeth exists, potassium sulphocyanate is absent, whereas this salt is present in large quantities in the mouths of individuals whose teeth are immune to decay.

### Montreal Medical Journal.

*February.*

78 Glanders in Canada. G. D. Robins, Montreal.
79 Family Physician and the Insane. T. J. W. Burgess, Montreal.
80 *Miliary Tubercle of the Chorioid. G. H. Mathewson, Montreal.
81 The Quality of Milk: What Can Be Done to Improve It. J. E. Laberge, Montreal.
82 Purulent Conjunctivitis. H. McKee, Montreal.

80. **Miliary Tubercle of Chorioid.**—Mathewson reports two cases which present some interesting features. The first case was diagnosed as a pleurisy with effusion, and a considerable quantity of fluid was removed. An examination of the fluid and also of the sputum for tubercle bacilli proved negative. A guinea-pig was inoculated with some of the pleural fluid and when killed showed definite signs of tuberculosis. A careful examination of the eyes revealed two miliary tubercles of the chorioid in the left eye. The patient died with pronounced symptoms of meningitis. A necropsy could not be done. The second case presented the characteristic symptoms of typhoid including a positive Widal reaction, but the period of elevated temperature was unduly prolonged. The patient began to complain of headache, cough and scanty expectoration. Examination of the sputum for tubercle bacilli was negative. An area of slightly impaired resonance was found at the apex of the right lung. In each eye there was a single miliary tubercle. The patient died and the necropsy showed miliary tuberculosis of lungs, liver, kidneys, meninges and chorioid.

### Western Medical Review, Omaha.

*February.*

83 The Trained Nurse. F. A. Long, Madison, Neb.
84 Treatment of Fractures of the Neck of the Femur. J. P. Lord, Omaha.
85 *What Shall We Do to Check the Commission Evil. H. Gifford, Omaha.
86 Use and Abuse of Obstetric Forceps. A. B. Somer, Omaha.
87 Salt Action and Salt Solutions. A. L. Muirhead, Omaha.

85. **How to Check Commission Evil.**—In Gifford's opinion there are two measures that would, in a measure, check the commission evil. One of these would be for the state or national society to come out flat-footed and say that the best way for the general practitioner to get his dues is to establish a rule that he is entitled to a definite share, say 10 per cent. or 25 per cent., of the fee charged by the specialist; and that this share shall be paid with the full knowledge of the patient, and that any one paying or offering to pay a larger commission than the established one shall be expelled from the society. Such a plan, objectionable as it might be on some grounds, would at least have the merit of being free from hypocrisy. Its most serious defect, however, is that it would inevitably lead to one of the abuses which any system of commission-giving leads to, namely, to the sending off of a lot of patients for operations or consultations which could well be avoided. The other measure, and the one which Gifford seriously proposes for consideration, is a rule which shall automatically expel from the society any member who, after a fair and impartial hearing shall be found guilty of giving or taking commissions.

### The Ophthalmic Record, Chicago.

*February.*

88 *Impressions of the Basle or Inner-pole Magnet. H. Gifford, Omaha.
89 A New Fixation Forceps. C. H. Beard, Chicago.
90 Tuberculin Injections in a Case of Probable Cerebellar Tumor. H. B. Young, Burlington, Iowa.
91 Chalazion Forceps. H. R. Boettcher, Chicago.
92 *Pulsating Exophthalmos—Ligation of the Orbital Artery—Recovery. F. P. Lewis, Buffalo.
93 *Simple Test for Convergence Power. M. D. Stevenson, Akron, Ohio.

88. **Inner Pole Magnet.**—Gifford questions whether the inner pole magnet can excel or even equal the strength of the Haab instrument, but his experience has convinced him that the instrument possesses advantages which make its use desirable. These advantages are the ease with which the eye can be illuminated when the small points are used, and the handiness of the small cores in comparison with the giant magnet or any hand magnet. Where a maximum of magnetic force is desired, the Haab instrument, used as an inner pole, is the ideal one.

92. **Pulsating Exophthalmos.**—Lewis' patient was a strong man, 26 years old, who received a blow on the head, which rendered him unconscious. After several weeks a pulsating exophthalmos was present. A marked feature of the case was a feeling of anxiety almost amounting to nervous terror. Having decided that an aneurism of the ophthalmic artery was responsible for the condition, Lewis concluded to operate. The artery was tied off just within the orbital cavity and within three weeks all the symptoms, except some divergence, had disappeared. The patient eventually made a complete recovery. Vision in each eye was 20/30. The interest in this case centers in the fact that although some portion of the aneurism extended outside of the orbit, a ligature within succeeded in controlling it, and that without removal of the eye.

93. **Test for Convergence Power.**—The test described by Stevenson is used to ascertain whether a patient's eyes converge just enough, too much, or too little for an object held one-third of a meter from the eyes, while the desire for single vision is suppressed.

### Canada Lancet, Toronto.

*March.*

94 Perforation in Typhoid. McPhedran, Toronto.
95 Treatment of Chronic Heart Diseases. T. Schoot, Nauheim, Germany.
96 Hygiene in Public Schools. C. J. Fagan.
97 Case of General Septic Peritonitis. J. B. Coleridge, Ingersoll.

### Journal of the Minnesota State Medical Association, Minneapolis.

*March 15.*

98 Gastrogenic Intestinal Diseases. A. Schmidt, Dresden, Germany.
99 Treatment in Cerebrospinal Fever. E. E. Bigelow, Owatonna, Minn.
100 Paracentesis Spinalis, with Report of a Case of Cerebrospinal Meningitis. W. H. Witherstine, Rochester, Minn.
101 A Few Drugless Remedies in Treatment of Disease. O. F. Way, Claremont, Minn.

### Vermont Medical Monthly, Burlington.

*March 15.*

102 Treatment of Pernicious Vomiting of Pregnancy. E. A. Colton, Montpelier, Vt.
103 The Third Stage of Labor. E. B. Watson, Williamstown, Vt.
104 Postpartum Hemorrhage. C. E. Griffin, Fair Haven, Vt.
105 Repair of Lacerated Perineum. A. C. Bailey Randolph.
106 Care of Newborn Infant. C. H. Burr, Montpelier.

### Annals of Gynecology and Pediatry, Boston.

*March.*

107 Ectopic Gestation. H. F. Quackenbos, New York.

### American Practitioner and News, Louisville, Ky.

*March.*

108 Cholera Infantum or Acute Milk Infection. J. C. Butler, Mountain City, Tenn.
109 Emergency Surgery. F. W. Samuel, Louisville, Ky.
110 Treatment of Acute Diffuse Peritonitis. A. D. Willmoth, Louisville, Ky.

## FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

### British Medical Journal, London.

*March 9.*

1 *Friedreich's Ataxia. T. W. Griffith.
2 *Treatment of Incipient and Borderland Cases of Insanity in General Practice. E. W. White.
3 *Case of Abscess of Cerebrum: Recovery. L. B. Rawling.
4 *Total Enucleation of Prostate, for Radical Cure of Enlargement of that Organ. P. J. Freyer.
5 *Tetanus Treated with Antitetanic Serum. M. W. Hall, E. G. Carter and C. R. Howard.
6 *Staining of Animal Parasites. I. W. Hall.
7 Kala Azar. L. Rogers.

1. **Friedreich's Ataxia.**—Griffiith reports five cases of this affection occurring in two families. In one family two sisters, aged respectively 17 and 10 years, were affected, and in the other family the second, third and seventh members of a family of 13 were affected. These three patients were two brothers, aged respectively 29 and 18 years, and a sister, aged 27 years.

2. **Incipient and Borderland Cases of Insanity.**—The cases considered by White in discussion of treatment are the following: Backward or deficient children; epileptics; neurotics; the moral imbecile; incipient melancholia and mania; borderland delusional cases; the premature dements; borderland alcoholic insanity and paralytic insanity; incipient senile dementia, and the incipient general paralysis of the insane. The treatment adopted by White is similar to that employed by other alienists.

3. **Cerebellar Abscess.**—Rawling reports a case of abscess of the cerebrum, occurring in a man aged 21, who had been suffering from a purulent discharge from the left ear for four months, pain in the ear then developed, and two weeks later chronic frontal headache. There also was inability to close the left eye completely, and the face was drawn over to the right side. The mastoid antrum was exposed and found full of cholesteatoma. The extradural space was exposed and examined, but without result. Although the patient felt better afterward, the previously existing optic neuritis increased and vomiting of the cerebral type occurred. At a second operation the antero-lateral aspect of the cerebellum was exposed and an abscess cavity was found one inch from the surface. One ounce of greenish pus was evacuated and the cavity adequately drained. The patient regained excellent health, but complained of pain over the left occipital parietal region and of inability to see objects in the right visual field. The gait was also slightly staggering and there was a decided tendency to lurch toward the left side when standing with the eyes shut. There was no evidence of optic atrophy.

4. **Enucleation of Prostate.**—Freyer reports a further series of 119 enucleations of the prostate for enlargement of that organ, making a total of 309 cases in which he has operated. In connection with these 119 operations there were nine deaths. The causes of death were jaundice (case complicated by malignant disease of liver), pulmonary embolism, shock and uremia (six cases in which the kidneys were extensively diseased before operation). The ages of the patients varied from 50 to 86 years, the average age being about 68.

5. **Tetanus Treated with Antitetanic Serum.**—Hall, Carter and Howard each report a case of tetanus successfully treated with antitetanic serum.

6. **Staining of Animal Parasites.**—The method of staining animal parasites devised by Hall is described as follows:

1. Prepare a film of the blood, feces, or sediment of the secretion. Fix by heat, or, less preferably, by formalin vapor.
2. Treat the film with the following solution from one-half minute to 2 minutes: Watery methylene blue, 1 per cent., 100 c.cm.; glacial acetic acid, 5 c.cm. (Neisser's methylene blue solution may be equally well used if at hand. Methyl violet, Nile blue, etc., are not so good.)
3. Wash in water.
4. Cover the film with saturated alcoholic eosin solution. Allow to stain for from 5 to 10 minutes, or heat over the flame, blowing out the alcohol each time it catches fire, until the film is almost dry.
5. Wash in water.
6. Fix in potash alum solution for from one-half minute to 2 minutes.
7. Decolorize in 90 per cent. alcohol until a uniformly pink color obtains.
8. Wash in water; allow to dry; mount in Canada balsam.

It is the treatment with acetic acid which affects the outer coverings of the ova, embryos and parasites, and allows the stain to permeate the entire structure.

### The Lancet, London.

*March 9.*

8 Pyorrhea Alveolaris. K. W. Goadby.
9 Kala Azar, Its Differentiation and Epidemiology. L. Rogers.
10 *Insanity, with Special Reference to Prognosis. A. R. Urquhart.
11 Postoperative treatment of Congenital Hip Dislocation. J. J. Clarke.
12 *Uterine Fibroids. A. E. Giles.
13 Operative Treatment of Traumatic Psychosis. B. Hollander.
14 National School for Consumptives. C. H. Garland and T. D. Lister.

10. **Insanity.**—Of 110 alcoholic cases investigated by Urquhart nearly 43 per cent. were hereditarily predisposed to insanity, and nearly 23 per cent. to alcoholism. Out of 40 cases of general paralysis 23 were undoubtedly syphilitic and 14 were alcoholic. The author's experience leads him to believe that the hereditary factor is of importance in general paralysis. Among his 40 cases the heredity of insanity found expression 10 times, eccentricity 4 times, neurosis 12 times and alcoholism 14 times. Rheumatism, gout and tuberculosis were also noticed. There was a distinct neuropathic heredity in 32 cases. There were only five cases of ordinary, uncomplicated epilepsy and 11 of alcoholic epilepsy. Urquhart concludes that the innate or hereditary cases of insanity terminate in recovery in fair proportion, although they are more subject to relapse than cases in which the insanity is acquired. He finds that the average age on admission for men is 36 years, and the age of death 54.65 years, as against 63.96 for healthy males. The average age on admission for women is 38 years, and the age of death is 60.93, as against 66.83 for healthy females. Of 809 patients 31.14 recovered; in 38.93 the condition remained stationary; 17.3 died.

12. **Observations on Uterine Fibroid.**—Giles claims that the doctrine that the menopause is Nature's cure for fibroids is a mischievous tradition. He summarizes his reasons for this belief as follows:

1. The ostensible menopause is delayed in cases of fibroids and menstruation—or, at least, uterine hemorrhage—may continue for years after the usual age of the menopause has been passed; meanwhile the severe losses of blood may imperil the patient's life, or impair her health so seriously that many years will be required to recover the lost ground.
2. The cessation of hemorrhage, when it does occur, does away with only one of the dangers incidental to fibroids; and the patient may remain for many years disabled by pain and by the weight of the tumor.
3. The time of the menopause has its own special risks in relation to fibroids; the most important are degenerative changes in the tumors and injurious pressure effects when a tumor which has occupied an abdominal position atrophies just sufficiently to allow of its falling into and filling the true pelvis.
4. When, in the vain hope that the menopause is going to work a cure, operation has been delayed year by year and then has to be undertaken in spite of complications and of the enfeebled state of the patient, the danger of a fatal result is materially increased.

### Journal of Tropical Medicine and Hygiene, London.

*March 1.*

15 Case of Black Water Fever Occurring After Twenty-three Years' Residence in Central Africa. R. Howard.
16 *Occurrence of Hymenolepsis Nana in the United States. W. H. Deaderick, Marianna, Ark.
17 *The Actinic Theory of Sunstroke. A. Duncan.

16.—See THE JOURNAL, Dec. 22, 1906, page 2087.

17. **Actinic Theory of Sunstroke.**—Duncan believes that the actinic theory of sunstroke is the correct one. He urges that soldiers' helmets should be lined with orange red; that their khaki coats should have a detachable strip of orange red underneath the material along the spine, and that the men should wear shirts dyed this color.

### Intercolonial Medical Journal of Australasia, Melbourne.

*January 20.*

18 Miner's Disease. W. Summons.
19 *Case of Acute Suffocative Pulmonary Edema. A. E. R. White.
20 *Acute Hemorrhagic Pancreatitis. R. H. Russell.
21 *Cases of Surgical Interest. W. Moore.

19. **Acute Suffocative Pulmonary Edema.**—The treatment employed by White in his case proved most effective. Nothing was known of the history of the patient, a man, except that he had vomited several times on his way to the hospital. He was given strychnin and inhalations of oxygen and amyl nitrite without any apparent relief of the dyspnea or any lessening of the degree of cyanosis. He was then given morphin, gr. 1/6, with atropin, gr. 1/100, and in about ten minutes improvement in his condition was noted. Fifteen ounces of blood were then extracted from one of the veins of the forearm. During the venesection the patient rapidly improved and regained consciousness. The man was kept in bed, dieted and given potassium iodid in doses of from 20 to 30 grains, three times a day. He recovered from this attack, but about five months later he returned with another attack. The same treatment was carried out as before, with the same result.

20. **Acute Hemorrhagic Pancreatitis.**—Russell reports an instance of this kind, which simulated intestinal obstruction so closely that the diagnosis was made accordingly. Operative intervention carried the case to a successful end.

21. **Cases of Surgical Interest.**—The cases reported are as follows: Two cases of appendicitis in which the omentum was wrapped around a sloughing appendix; two cases of fracture of the femur, with fracture of the upper end of the humerus.

### Glasgow Medical Journal.

*March.*

22 *Ankylosis of Spine. W. K. Hunter.
23 Value of Tuberculo-Opsonic Index in Diagnosis. E. T. Fraser.
24 *Case of "Spider's Lick." D. H. Macphail.
25 *Fracture of Rib by Sneezing. H. E. Jones.

22. **Ankylosis of Spine.**—The outstanding feature of Hunter's case, a man aged 48 years, was the rigidity and immobility of the vertebral column, but associated with that was a generalized muscular atrophy as well as contractures of the adductors of the humerus and the flexors of the knee. He regards the case as one of rheumatoid arthritis.

24. **Spider's Lick.**—MacPhail reports a case of eruption on the forearm due to contact with a spider. The whole of the affected area was red and raised above the general surface. There were numerous small pustules. There was no pain. Itching was present at first, but soon disappeared. A carbolic acid dressing, 1-40, was applied and on the following morning the eruption had disappeared. In India this condition is known as spider's lick.

25. **Fracture of Rib by Sneezing.**—Jones reports a case of fracture of the tenth rib, which the patient thought was the result of a very violent sneeze. No other cause for the fracture could be discovered.

### Annales de l'Institut Pasteur, Paris.

*Last indexed, page 649.*

26 (XXI, No. 1, pp. 1-79.) *Treatment of Experimental Infection from the Trypanosoma gambiensis. (Inf. exp. à Tryp. gambiense.) F. Mesnil, M. Nicolle and P. Aubert.
27 Action of Bile on Pneumococcus and Other Bacteria. (Action de la Bile.) M. Nicolle and Adil-Bey.
28 Sero-immunity to Bile Salts. (Séro-immunité vis-a-vis du choléate de soude.) M. Nicolle.
29 Antimalaria Campaign in Algeria. (Etudes épidémiologiques et prophylactiques du paludisme.) E. and E. Sergent.
30 *Ocular Manifestations of Trypanosomiasis. (Manifestations oc. au cours des trypanosomiases.) V. Morax.
31 Anaërobic Microbes of Drinking Water. (Etude bact. des eaux potables.) H. Vincent.
32 Dosage of Isobutyric and Valeric Acids. (Application de la méthode de distillation fractionnée de Duclaux à la recherche et au dosage des acides isobutyrique et valérique normal.) A. Lasserre.

26. **Treatment of Experimental Trypanosomiasis.**—This article relates the results of extensive experimental research on trypanosomiasis induced in rabbits, dogs, monkeys, etc., and treated with various stains and a preparation of arsenic. The writers do not state that any of the numerous animals in their experiments were cured by the drugs, but they add that such is their impression in regard to the monkeys and to the majority of the rats and other animals. [Ehrlich has recently announced that trypanosomes gradually acquire an artificial immunity to certain drugs when treated with them for some time. He was able to demonstrate this for 18 different chemicals belonging to the trypan group, the arsenic group and the basic anilin stain group, producing fuchsin-proof, trypan red-proof and a number of other similar strains of trypanosomes. This acquired property of artificial immunity to a certain chemical was retained by one strain through 92 passages through animals. He found further that when a strain had become thus immunized against a certain chemical, another chemical might be able to act on it with primal power—in case sufficient amounts were used—and the trypanosomes would be rapidly annihilated. He draws the conclusion that a combination of some of the various remedies from these three groups of chemicals found effectual against trypanosomes might cure the trypanosomiasis where a single one would fail. Laveran, van Campenhout and Kopke have also reported experiences showing the advantage of combining strychnin with arsenic in treatment of sleeping sickness.—ED.]

30. **Ocular Manifestations of Trypanosomiasis.**—Morax calls attention to the frequency and the special characteristics of the ocular manifestations in the course of infection with trypanosomes. The finding of an interstitial non-ulcerative keratitis, in an animal, suggests the possibility of a trypanosome infection. This interstitial keratitis is the work of the trypanosomes proliferating in the spaces between the layers of the cornea. Their proliferation induces infiltration of leucocytes and may entail complete disorganization of the cornea, or the lesions may heal, leaving scarcely a trace. The latter condition is observed in animals that display marked resistance to trypanosome infection. This was observed particularly in goats infected with dourine or nagana. Dogs, on the other hand, always died while the cornea was still completely opaque.

### Bulletin de l'Académie de Médecine, Paris.

33 (LXXI, No. 6, pp. 181-242.) *Program for International Congress of Penitentiaries at Washington in 1910. (Congrès pénitentiaire internat.) Magnan. H. Monod and Motet.
34 *Infection from Oysters. (Epidémie de fièvre typhoïde et d'accidents gastro-intest. consécutive à l'ingestion d'huitres.) A. Netter.
35 *Prevention of Injury from Fire-damp and Carbonic Oxid. (La lutte contre le grisou et contre l'oxyde de carbone.) N. Gréhant.
36 (No. 7, pp. 243-278.) Treatment of Muscular Atrophy After Joint Effusions by Systematic Muscular Exercises with Progressive Resistance. (Atrophies musculaires.) Rochard and Berger.
37 *Nomenclature of Diseases. (Nomenclature des maladies.) Fernet.
38 (No. 8, pp. 279-312.) Three Cases of Tuberculosis Affecting the Muscles. (Tuberculose musculaire. Myosite tuberculeuse.) Kirmisson and Cornil. Commenced in No. 6.
39 *Malaria in Madagascar. (Epidémie de paludisme, 1906.) Kermorgant, Blanchard and Kelsch.

33. **Program for International Congress of Penology.**—The French government commissioned the Académie to suggest topics for discussion at the next international congress of penology, to be held at Washington in 1910. The committee to which the matter was entrusted suggests three topics: "The advisability of adding to the law course a course on elementary psychiatry to enable lawyers and judges to be better equipped for passing judgment on the criminal insane. Physicians of penal establishments should be thoroughly trained in psychiatry, to enable them to estimate the mental condition of the prisoners in their care. Systematic surveillance by an expert psychiatrist would disclose the cases of insanity developing in the prison, and enable their cure by treatment in appropriate institutions, and it would also supply a basis for rectification of errors in judgment and the revision of sentences imposed on the irresponsible." The second question suggested for discussion is: "The advisability of creating special establishments, intermediate between the prison and the insane asylum, in which criminals can be interned when there is doubt as to their mental responsibility, the duration of their stay in the establishment to be determined by the improvement in their mental condition. They should not be discharged without a legal decision to that effect based on the advice of a special committee." The third question refers to the advisability of complete suppression of all alcoholic drinks in case of convicts addicted to alcohol.

34. **Severe Gastrointestinal Infection from Oysters.**—An epidemic of 125 cases of severe gastrointestinal disturbances is described, traced to infection from oysters. The cases were distributed through fourteen towns and cities, but all the persons affected had partaken comparatively recently of oys-

ters from a certain oyster bed. In 33 persons typical typhoid fever was observed, ending fatally in 7. In other cases a hectic fever simulated acute tuberculosis. Even when the disturbances were limited to colic, diarrhea and vomiting, they did not occur at once, but an interval of from 24 to 48 hours elapsed. In some cases there was much somnolence, weakness, and, especially in children, a syncopal condition with profuse sweating. Epistaxis was observed in many instances. The gastrointestinal disturbances generally subsided in a few days, but in some cases they persisted for several weeks and the patients were long in recovering. In 3 of the cases a choleriform diarrhea with anuria proved fatal. The troubles observed were evidently due to mixed infection. In 1896 the Académie recommended that all oysters from suspicious oysters beds, a week before being offered for sale, should be transferred to some point along the coast, where they would be laved with pure sea water, not so much for the purpose of rinsing the oysters as to promote phagocytosis, and thus to cause the destruction of micro-organisms lurking in the oyster organism or their expulsion in the excreta or by the action of the ciliated epithelium. The vital processes in the oyster in contaminated waters are sluggish, but they start up with amazing energy when the oyster is transferred to pure sea water.

35. **Fire-Damp and Carbonic Oxid.**—Grehant urges that the air in mines should be tested for the presence of fire-damp night and day, and has devised a simple means for determining its presence with the "eudiometer," slightly modified. He also calls attention to the extreme toxicity of water gas, stating that 22 c.c. of dry carbonic oxid were obtained from 100 c.c. of red blood from the inferior vena cava of a dog which had died in 33 minutes after breathing a mixture of 294 liters of pure air and 6 liters of water gas containing 40 per cent. carbonic oxid. In another experiment, a dog was made to inhale a mixture of one liter of illuminating gas in 299 liters of ordinary air for an hour. About 2.8 c.c. of carbonic oxid were obtained from 100 c.c. of the animal's blood afterward. This experiment shows the danger from leaking gas fixtures, as 1 per cent. of gas in the air caused the passage of nearly 3 c.c. of carbonic oxid into 100 c.c. of blood. Water gas, he says, contains seven times as much carbonic oxid as ordinary illuminating gas.

37. **Suggestions for New Nomenclature for Diseases.**—THE JOURNAL, March 2, 1907, p. 838, mentioned Lancereaux's suggestions in regard to a new classification and nomenclature of diseases. A committee was appointed to study the subject, comprising Lancereaux, Blanchard, Jungfleisch, Reclus and Fernet. The committee accepted Lancereaux's 3 classes and added 2 more, the "psychonoses"—affections caused by moral or mental agents, and "trophonoses"—affections caused by agents of nutrition. All diseases can be classified in these 5 groups: Physical agents—physinoses; chemical agents—cheminoses; animate agents—bionoses; mental and moral agents—psychonoses, and nutritional agents—trophonoses. The latter group includes all the affections resulting from nutritional disturbances, whether due to excessive or defective nourishment, insufficient or ill-regulated physical exercise or vitiated air. These diverse causes induce a dyscrasia of the blood and organic lesions which may develop at almost any point, causing changes in the vascular or digestive system, in the liver or kidney, in the central or peripheral nervous system, or plethora and vitiation of the blood. They are not only the direct causes of various diseases—gout, chronic rheumatism, diabetes, kidney and gallstones and sclerosis of the viscera—but they impress a special stamp on accidental affections of various origins which may supervene on a soil thus modified by the diathesis inherent to the individual. The rôle of the nervous system in some of these trophonoses is undeniable, but the trouble in the nervous system is a result of the general or partial dystrophy. This same diathesis is also responsible for certain hypertrophies or atrophies, arrests of development, deformities and tumors resulting from local nutritional disturbance, such as cancers, fibromata, lipomata and certain cysts. The term "pathy," the committee adds should be retained to designate the local manifestations of any of the above 5 groups of agents, and if the adjective designating the cause is added, the term thus becomes explanatory while localizing the trouble, as, for example, syphilitic dermopathy, alcoholic gastropathy, rheumatic cardiopathy. The advantages of a new nomenclature based on the above principles are extolled by the committee, and especially the tendency to direct the mind constantly toward the etiology of the affection in question. When the etiologic conception of an affection is constantly impressed on the mind it bears fruits in the lines of prophylaxis, of hygiene, both moral and material, and of treatment. Blanchard added that in parasitology an etiologic nomenclature has already made great progress. He has long used the terms "zoösis" and "bacteriosis" to take the place of mycosis and similar terms. Uncinariosis and babesiosis are proper terms, he declares, for the affections incorrectly called ankylostomiasis and piroplasmosis (the latter due to the Babesia bovis). The latter terms were introduced long after the others had been established in the literature and had proved their correctness and usefulness.

39. **Malaria in Madagascar.**—It is stated that malaria is more prevalent in Madagascar than ever before, and that the condition is becoming serious. It is impossible to petrolize the rice fields which are the main source of support for the natives, and it is equally impossible to screen the native huts. Blanchard urges the government to distribute quinin and to insist that all workmen on public or private works must take a daily preventive dose, given by the proprietors or contractors of the works, who should be supplied with quinin at cost price by the government. It is stated that out of a population of 35,000, Tananarivo had 18,000 ill with malaria last June.

### Presse Médicale, Paris.

40 (XV, No. 11, pp. 81-88.) *Imaginary Seasickness. (Le mal de mer d'imagination.) F. Regnault.
41 *Interauricular Insufficiency. (Insuff. inter-auriculaire.) H. Roger.
42 Cells in the Effusion of Epidemic Cerebrospinal Meningitis. (Cellules de l'exsudat.) Speroni.
43 The "Vibro-Suppressor." (Nouvel instrument pour la percussion topographique.) A. Abrams.
44 (No 12, pp. 89-96.) Clinical Exploration of the Colon. (Exploration du colon.) J. Okinczyc.
45 Mechanism and Action of Thermocauterization. (Cautérisation ignée.) P. Desfosses and A. Martinet.
46 (No. 13, pp. 97-104). The History of Electrolytic Introduction of Drugs. (Introduction electrolytique médicamenteuse.) A. Zimmern.
47 Protecting Function of the Liver Against Toxic Substances from the Intestines. (Fonction protectrice du foie.) G. A. Petrone and A. Pagano.
48 Passive Congestion in Treatment of Atonic and Phagedenic Ulcers on the Limbs. (Méthode de Bier, etc.) M. Bruas
49 (No. 14, pp. 105-112.) Study of Process of Degeneration of Nerves. (Nature intime du proc. de dégénérescence des nerfs.) G. Marinesco.
50 *Dangers of Habitually Eating Too Much. (Suralimentation habituelle.) M. and H. Labbé.
51 (No. 15, pp. 113-120.) The Uniform for Physicians of all Armies. (Uniforme des médecins militaires.) A. Epaulard.
52 Principles of Artificial Feeding of Infants. (Elevage au biberon.) P. Londe.
53 Prevention in Army of Contagion of Typhoid Fever from Urine. (Bidons démontables.) Bonnette.
54 (No. 16, pp. 121-128.) Scopolamin and Spinal Anesthesia for Laparotomies. (Rachistovaine et scopolamine.) Chaput.
55 Local Treatment of Gumma with Injections of Potassium Iodid. (Gommes syphilitiques et injections locales d'iodure de pot.) F. Trémolières.
56 (No. 17, pp. 129-136.) *Electric Sleep. (Le sommeil électrique.) S. Leduc.
57 Systematic Treatment of Attack of Influenza. (Grippe chez un adulte.) A. Martinet.

40. **Imaginary Seasickness.**—Regnault has had much experience as ship physician, and points out the necessity for differentiating between actual, somatic seasickness, and that which is exclusively the work of the imagination, as prognosis and treatment differ for the two forms. As a rule, in the imaginary variety the symptoms are more pronounced and more persisting. They may be accompanied by some unusual symptom which gives the clue to the imaginary character of the affection; sometimes the two forms are associated. It has been said that the smell of the ship, the sight of the movement of the ship and waves, and the noises of the machinery are the causes of seasickness, but the fact that the blind, the deaf and those who have lost the sense of smell are liable to suffer from seasickness, shows that persons affected by these conditions suffer more from their imagina-

tion than from the reality. This is also the case in the seasickness that comes from seeing others affected. Patients with imaginary seasickness require entirely different treatment from the other variety, emphasizing the psychologic element. These are also the cases that call for the most sympathy and in which the condition has hitherto been deemed incurable.

41. **Communication Between the Auricles.**—Rogers describes 2 cases of what he calls insufficiency of the inter-auricular valve. So long as the pressure in the left auricle is higher than that in the right, the valve keeps the abnormal opening closed, and the two auricles are separate and independent. But when the pressure in the right auricle is higher than that in the left, the valve opens and the venous blood mixes with the arterial. He diagnosed the condition in one case as nothing could be found in the heart or lungs to explain the excessive cyanosis and asphyxia. The patient was a man of 44, subject to recurring bronchitis every winter, rapidly inducing asphyxia and cyanosis. After the age of 30 he noted that he "got out of breath" easily on slight exertion, but was otherwise healthy. In the second case a man of 54 presented intense cyanosis accompanying recent bronchitis after old emphysema. As the bronchial affection healed, the cyanosis subsided. It reappeared, however, for a few minutes after every violent effort or fit of coughing. Each time that the insufficiency recurs in such cases the restoration to normal is slower and less complete.

50. **Hygiene of the Table.**—Labbe discusses the hygiene of the table and advocates four meals a day. Breakfast, he says, should be a warm, substantial meal to repair the tissues and produce energy for the morning's work. At noon, a light, easily digested lunch should supply the energy needed for the afternoon's work without making such demands on the system as to interfere with muscle and brain work. At 5 o'clock another light meal should be taken, supplying energy while waiting for the last meal of the day. This, the dinner at 7 or 8, should not be an elaborate meal, but a simple and short repast. As work is over, and as the expenditure of heat is less at night than during the day, the dinner does not have to produce much energy, but should serve merely for repair of tissue. The lightness of this repast enables the individual to retire soon after, without interfering with digestion or having his sleep disturbed. Labbé recognizes that this arrangement of meals conflicts with customary usages in France, but the first duty of the physician who strives to inculcate the principles of alimentary hygiene is to warn against habitual table excesses, and the present three or two meal a day plan generally leads to overeating at one or more of the meals.

56. **Electric Sleep.**—This is the term applied by Leduc to a condition in which all sensation is abolished and the individual lies in complete lethargy as the consequence of the passage through the brain of an electric current. The current used differs from those usually employed, in that it is constantly interrupted, a special device—of which he gives an illustrated description—allowing the current to pass, then interrupting it for a period nine times as long, then allowing it to pass again, always in the same direction, a hundred interruptions being made in the course of a second. The electromotive force should not be much above the low maximum desired, which renders storage batteries better for the purpose than the urban electric light service. The peculiar properties of this interrupted current, he states, have shown that it is far superior to all other means for exploration of the sensation, excitability, contractility, etc., in physiologic and pathologic conditions. Its proper use in these lines, he is convinced, will soon be rewarded with an abundant harvest of new facts. When this electric current is gradually turned through the brain of a dog or other animal he passes gently, progressively, and without a sign of resistance or pain, into a condition of cerebral inhibition analogous to the sleep of chloroform. Except for the preservation of the reflexes, especially if the spinal cord is not in the path of the current, the animal does not react to any stimuli, but seems to be in a condition of absolute general anesthesia; all kinds of operations can be performed and no reactions are observed any more than with profound chloroform anesthesia. To induce this electric sleep in the rabbit from 6 to 8 volts are necessary, giving 1 or 2 milliamperes in the intermittent circuit, which corresponds to 10 or 20 milliamperes in a circuit without the interruptions. The moment the current is turned off, the animal gets up, looks tranquilly around, manifesting neither suffering, fatigue nor fright, and as soon as he is relieved of the electrodes he frisks about gaily and eats with relish. No by-effects were ever observed, no vomiting, and only rarely a slight degree of stupor. The dogs submitted to the maneuvers without fear or resistance, even when repeated again and again. The action of the heart and lungs continues unmodified, even when the passage of the current is continued for nearly 5 hours, as he shows by tracings taken before, during and after such experiences. The instantaneous cerebral inhibition caused by closing the circuit always induces in animals the evacuation of the intestines and bladder. The blood pressure is high during the entire experience. This form of current abolishes first the functions of the higher centers, and not until later those of the heart and respiratory organs. For this reason Leduc thinks that this form of current would be much more humane than those usually employed for electrocution. Only two experiments on man have been made with this new interrupted current, and both were on Leduc himself, the results confirming in every respect those anticipated from observation of its workings on animals. The inhibition first affected the centers of speech, then the motor centers; the limbs without being completely relaxed were not stiff. The pulse was not affected, but respiration was a trifle impeded. When the current had been turned on to the maximum he was conscious, as in a dream, of what was going on around him, and could perceive contact, but with deadened sensation. The consciousness of the dissociation and successive suppression of the various faculties was like the impression in a nightmare in which one is unable to speak or move in the presence of a grave danger. On both occasions the experience was not pushed to the complete suppression of all consciousness, his assistants thinking each time that this stage had been reached, when they were just short of it. The voltage was 35; the milliamperage 4, and each time he was under the influence of the current for 20 minutes. When the current was turned off the awakening was immediate and complete, leaving no by-effects except a sensation of physical vigor, so that he was able to proceed at once to deliver a lecture. It is possible also with this current, he says, to induce complete local anesthesia, so that with the eyes shut it is impossible to say whether the region is being pricked, pinched or cut. Using a more powerful current, he was able to induce a typical epileptiform convulsion in animals. About 55 volts accomplished this in the rabbit, but 110 volts were necessary for dogs.

### Archiv f. Verdauungs-Krankheiten, Berlin.

58 (XII, No. 5, pp. 367-486.) Roentgen Diagnosis of Gastric Ulcer. (Neue Methoden zur Diagnose des Magengeschwürs.) J. C. Hemmeter.
59 Physiologic Importance of Mucus. (Bedeutung des Schleimes.) W. Zweig.
60 Splenomegaly with Cirrhosis of the Liver. (Bantische Krankheit.) M. Einhorn.
61 Shape of the Esophagus in Relation to Physiologic and Pathologic Conditions. (Konfiguration des Oesoph.) W. Telemann.
62 *Achylia Gastrica and Gastric Secretion in the Elderly. (Beschaffenheit der Magensekretion im höheren Lebensalter.) M. J. Liefschütz.
63 (No. 6, pp. 487-588.) *Experimental Study of Action of Alcohol on the Stomach. (Wirkung des Alkohols auf den Magen.) L. Kast.
64 Conditions of Secretion in the Stomach According to Findings in Dogs. (Sekretionsbedingungen des Magens.) W. Gross.
65 *Influences that Inhibit the Healing of Gastric Ulcer. (Heilung des Magengeschwürs hemmende Einflüsse.) F. Tecklenburg.
66 *Diagnosis of Carcinoma of the Stomach. (Diagnose des Magenkarzinoms.) A. Zirkelbach.

62. **Achylia Gastrica.**—Liefschütz announces that in his tests the secretion of the stomach in persons who have passed their fiftieth year showed a marked tendency to diminution. He states further that complete absence of free hydrochloric acid is relatively not a rare phenomenon in old age. In investigating the digestive power of the gastric juice by the

method of Mett, it should always be tested both without and with the addition of hydrochloric acid. The digestive power in cases of achylia produced by carcinoma of the stomach is not improved by the addition of hydrochloric acid. The aspect of the stomach contents and of the filtrate is often instructive. He adds that in examining the stomach contents the possibility of the passage of the so-called natural mixture, that is, a mixture of intestinal juice, pancreatic juice and bile, into the stomach must be kept in mind. The occasionally observed presence of pancreatic juice in the stomach affords a new means for the study of pancreas digestion and its disturbances. Gastric digestion is far from being so simple as it might have been assumed from previously known facts. There is no reason, he says, for separating simple achylia gastrica as an independent clinical entity with definite etiology. Its origin should be determined in the interests of effective treatment as well as in reference to prognosis.

63. **Action of Alcohol.**—Kast concludes as the result of experiments on a dog after the method of Pawlow and on a girl with a gastric fistula, after resection of the espohagus, that alcohol increases the amount of gastric juice, but does not affect the percentage of HCl, while the amount of pepsin is reduced. In a strength of 10 per cent, or less there is no noticeable local irritation from the alcohol, but when the proportion is above 20 per cent. local irritation is pronounced. Continued use of dilute solutions produces at first hyperchlorhydria, then catarrh with gradual decrease of acidity. The occurrence of hyperchlorhydria is explained by the fact that the increased quantity of the secretion mixed with the food gives an increased average acidity. In his experience, alcoholic drinks containing less than 20 per cent. of alcohol favored motility and absorption and did not materially reduce peptonization.

65. **Ulcer of the Stomach.**—Tecklenburg concludes from his research that a number of relapses in case of gastric ulcer are due to overstretching of the walls of the stomach. The most important cause of this overdistension is muscular atony and the swallowing of air. He concludes that if such ulcers do not heal under the ordinary measures gastroenterostomy should be resorted to.

66. **Gastric Carcinoma.**—Zirkelbach has tested Salomon's method of diagnosis of cancer of the stomach in 10 cases of carcinoma and 37 of other diseases, and is convinced that it is reliable for the early diagnosis of cancer of the stomach. The method consists in washing out the stomach in the evening and then on the following morning introducing 400 c.c. of normal salt solution. This solution is removed after a short stay in the stomach and tested for the presence of albumin and for the proportion of nitrogen. Marked turbidity with Esbach's reagent (picric acid) or the presence of more than 30 mg. of nitrogen indicates the presence of carcinoma.

**Centralblatt f. d. Grenzgebiete der Med. u. Chirurgie, Jena.**
*Last indexed, XLVII, page 1062.*

67 (IX, Nos. 17-23, pp. 641-928.) *Syphilitic Febrile Tertiary Visceral Affections. (Fieb. tertiär-syph. Organerkrankungen.) H. Raubitschek. Collective review of the literature.
68 *Tuberculin in Diagnosis and Therapeutics. (Diagn. und therap. Anwendung des Tub.) G. Weiss. Collective review.
69 *Old and New in Rachitis. (Altes und Neues uber Rachitis.) D. G. Zesas.
70 *Scoliosis in Sciatica. (Ischias scoliotica.) E. Oberndörffer. Collective review.
71 *Literature on the Gall Bladder and Biliary Passages During the Last Decade. (Lit. der Gallenblase und der Gallenwege.) A. v. Bardeleben.
72 *Leukemia and Pseudo-leukemia of the Skin. (Leucaemia und Pseudoleucaemia cutis.) L. Isler. Collective review.
73 *Value of Lumbar Puncture in Diagnosis and Treatment. (Diagn. und therap. Wert der Spinalpunktion.) W. Kaupe. Collective review.

67. **Febrile Syphilitic Affections of Various Organs.**—Raubitschek reviews 35 publications on this subject and emphasizes the necessity for bearing the possibility of a syphilitic affection in mind when confronted with a persistent hectic fever of dubious origin. Syphilitic affections of the liver, lungs and other organs may run their course with only slight or vague symptoms attracting attention to the organ. On the other hand, a febrile, acute tuberculous affection of the lungs may lead to a fatal termination in a syphilitic without the lues being directly responsible for it. In some of the cases reported an exploratory incision revealed a gummatous affection of the liver or other organ, and all symptoms subsided under mercurial treatment. The syphiliti affection may simulate acute articular rheumatism. In Klemperer's case a man of 30 had suffered for months from fever with a slight chill every evening, followed by sweating. Long-continued quinin treatment gave no relief, but mercurial injections had an astonishing effect. The liver and spleen returned to normal size, the fever vanished, and the patient has been in good health since.

68. **Tuberculin in Diagnosis and Treatment.**—About 350 articles are reviewed by Weiss without drawing any definite conclusions from the data presented by the various authors, although the important points are discussed in turn.

69. **Old and New in Rachitis.**—Zesas' article was commenced in No. 9 and is concluded in No. 18 of this publication. He cites Heubner, Bokai, Troitzky, Rauchfuss and others as advocates of phosphorus in treatment of rachitis, especially in combination with cod-liver oil, the results obtained surpassing those recorded from any other means of treatment. Cod-liver oil without phosphorus is sometimes given in small doses, a teaspoonful or two during the meals. Lime seems to be ineffectual, but when the child has started on the road to recovery, and the osteoid tissue has become capable of taking up the lime, then its administration seems rational. Stöltzner gives 0.5 gm. calcium carbonate three times a day. Lime water contains too little lime, less than the same amount of cow's milk. Bernard has reported good results from administration of dog's milk. Iron preparations seem to do good service, especially in cases in which cod-liver oil is not tolerated. Medicated baths have also been found useful, especially those with sea salt. Henoch has the legs rubbed with flannel during the bath and others have used massage with benefit. Good results have also been reported from galvanization along the spine and from electric baths. In extreme craniotabes the head of the child should be supported on a soft ring cushion. Fueth has used to advantage an apparatus to ensure respiration of condensed air to combat the rachitic deformity of the chest. This not only benefits the bony frame, but also helps to develop the lung tissue. Rachitic kyphosis should be combated by having the child lie on a hair mattress instead of being carried in the arms, or a plaster cast may be used for young children and a Phelps bed for older ones. Hoffa's experience has been that the children all recover in from two to three months if kept on a strict antirachitic diet, lying flat, with massage of the muscles of the back. The position in which the child lies is important also in prevention of scoliosis. He generally supports the spine in such cases with a corset. Rachitic deformity of the leg is liable to subside spontaneously in the course of three or four years in children under six. In treatment, an apparatus with elastic pressure on the convex side and permanent traction on the concave side will be found most useful. The application of the apparatus requires such care on the part of parents to prevent decubitus that, as a rule, Hoffa advises operative treatment, manual osteoclasis, for young children, with instrumental osteoclasis for older children. Macewen performed osteotomy ten times on one patient before the limb was brought to the desired shape.

70. **Scoliosis Accompanying Sciatica.**—Oberndörffer concludes from his study of the various publications that have appeared on sciatic scoliosis that the most probable explanation of the scoliosis is from the extension of the disease process to the lumbar nerves. This factor distinguishes sciatic scoliosis from that due to mechanical static stress. Some writers mention the scoliosis as occurring in 90 per cent of their cases of sciatica, while others have observed it in 10 per cent. or less.

71. **Literature on the Gall Bladder and Biliary Passages.**—More than 1,000 articles or books in various languages were consulted by von Bardenheuer in preparing his monograph describing his 286 operations for gallstones. He here reviews the entire list, with brief summaries of the more important

points in turn as he cites the titles in full. The titles are arranged alphabetically in two groups, the first containing the articles on the anatomy and physiology of the gall bladder and genesis of gallstones, and the second the articles on the pathology of the gall bladder and biliary passages since 1897. The list includes a number of inaugural theses, and is an international summary.

72. **Leukemia and Pseudoleukemia of the Skin.**—Isler analyzes 44 communications that have been published on the cutaneous manifestations of lymphatic leukemia or pseudoleukemia. Most of the writers report their cases without decisive comment. The cutaneous manifestations may be diffuse, suggesting eczema, or they may appear as tumors large or small, generally affecting the face and causing subjectively little disturbance, but accompanying the changes in the blood. Similar manifestations may appear with violent itching, generally with the so-called pseudoleukemia. In other cases the cutaneous manifestations may be associated with or show a tendency to transformation into fungoid mycosis, sarcomatosis of the skin or pernicious lymphoderma of Kaposi's type.

73. **Lumbar Puncture.**—Kaupe discusses the diagnostic and therapeutic importance of lumbar puncture from analysis of 487 articles on the application of this measure in the clinic. He states that the consensus of opinion has established the harmlessness of the measure if due precautions are taken. Too large amounts of the fluid should not be allowed to escape and it should never be aspirated; and the measures should never be applied to an out-patient. Transient by-effects such as hemorrhage, transient lesions of the nerves, headache, vertigo, vomiting, irregular pulse or pains in the limbs, have been reported by a few writers, and Remak urges restriction of the measure to certain indications. Exceptional caution is necessary on suspicion of a tumor in the brain or in the cerebellum, on account of danger of hemorrhage in the tumor tissue, of variations in the intracranial pressure and of the shutting off of the fluid in the ventricle from the rest of the cerebrospinal fluid. In one case of otogenic meningitis no bad effects were observed, but in another case these were noted. Lumbar puncture is generally harmless in tuberculous meningitis, but again it may hasten the fatal termination. In case of hydrocephalus it can do no harm unless the foramen of Magendie is occluded. For diagnostic purposes lumbar puncture may prove of paramount importance. Chemical tests for albumin may prove very instructive, apart from the knowledge gained in regard to the pressure of the cerebrospinal fluid. Its principal value, however, is for cytologic and bacteriologic investigation. As a rule, Kaupe says, polynucleosis is observed with acute and mononucleosis with chronic affections of the central nervous system, especially of the meninges. Lymphocytosis is often an early and important symptom of progressive paralysis and tabes, and confirms the probable syphilitic etiology of tabes. Bacteriologic examination of the cerebrospinal fluid is sometimes the only means of diagnosing epidemic cerebrospinal meningitis. From the therapeutic standpoint, lumbar puncture is able to relieve and to improve threatening symptoms, at least temporarily and in many cases has a direct life-saving and curative action. A number of such instances of its beneficial influence were reported in the last epidemic of meningitis in Germany. Epidural injection probably acts mainly by suggestion, but may sometimes be useful in this line.

### Münchener medizinische Wochenschrift.

74 (LIV, No. 7, pp. 305-352.) Mode of Action of Modern Therapy of Gonorrhea. (Wirkungsweise der mod. Gonorrhoetherapie.) K. Zieler.
75 Etiology of Erythema Nodosum. (Erythema nodosum.) W. Hildebrandt.
76 *Treatment of Diabetic Phthisis. (Diabetische Phthise.) O. Thorspecken.
77 The "Silver Spirochetes" True Micro-organisms. (Nerv oder Mikroorganismus?) H. Bab.
78 Bifocal Crystalline Lens. (Linse mit doppeltem Brennpunkt.) G. Freytag.
79 Action of Uviol Lamp on the Skin. (Wirkung des Uviollichtes auf die Haut und deren therapeutische Verwendung in der Dermatologie.) C. Stern and Hesse.
80 *Passive Hyperemia as Remedy for Seasickness. (Bier'sche Stauung bei Seekrankheit.) H. Roesen.
81 Field Hospital in Southwest Africa, 1905. (Feldlazarett.) A. Lion.
82 Seventieth Birthday of F. A. Kehrer. Heil.

76. **Treatment of Diabetic Phthisis.**—Thorspecken has had considerable experience with diabetics suffering from pulmonary affections, and has found that careful treatment gives excellent results. The diabetes should be treated with the same energy as without the pulmonary complications. In one case a tuberculous affection of the larynx healed as the patient, a man, was cured of the glycosuria. He has since been in comparative health for 16 years. In another case a bilateral tuberculous process in the upper lobes with much emaciation was so much improved under treatment of the diabetes that the patient, a physician, was able to resume his practice and has gained nearly 12 pounds in weight. In another case the tuberculous process was primary, and in a long latent stage when the onset of the diabetes made it flare up again. The course of this case shows how neglect of the diabetes in an active tuberculosis soon avenges itself, and it also shows the benefit on the tuberculous infection of effectual treatment of the diabetes.

80. **Passive Hyperemia in Treatment of Seasickness.**—Roesen has derived much benefit in seasickness from Bier's method of inducing hyperemia in the head by an elastic band around the neck. His personal and clinical experience as ship physician showed that this measure was able to induce subjective well-being, but had no influence on the tendency to vomit when the stomach was full. When the stomach was empty, however, there was not the slightest tendency to nausea. The application of the elastic band must be individualized and must be supervised by the physician. It is not necessary to keep it up during the night, when the patients are reclining.

### Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.

*Last indexed, page 876.*

84 (LIX, No. 1, pp. 1-204.) *Laparotomy for Chronic Inflammatory Affections of the Uterine Adnexa. (Adnexerkrankungen und ventrale Laparotomie.) P. Esch.
85 Diffuse Proliferation of the Mucosa into the Wall of the Uterus. (Diffuse Adenome im Myometrium.) Schütze.
86 Artificial Sterilization of Women. (Schützt die Anwendung der "Darmmethode" bei tubarer Sterilisation vor Rezidiven?) Offergeld.
87 Peripheral Langhans' Cells. (Periphere Langhanszellen.) O. O. Fellner.
88 Elimination of Scraps of Tissue in Physiologic Menstruation. (Anatomie der Menstruationsabgänge.) E. von der Leyen.
89 Cells of Chorion and Decidua. (Decidua- und Chorionzellen.) R. Meyer.
90 *Implantation of Ureter in the Bladder. (Einpflanzung des Harnleiters in die Blase.) K. Franz.

84. **Laparotomy for Chronic Inflammation in Adnexa.**—Esch relates the experiences at Olshausen's clinic with 83 cases of chronic inflammatory affections of the adnexa treated by a laparotomy. The mortality was 7.2 per cent. The open abdominal cavity was protected with sponges against the bursting of a pus pocket, and every effort was made to leave the abdominal cavity as dry as possible before suturing the incision, without rinsing or draining. Olshausen says that any pus that can be seen during the operation can be readily wiped away and any that escapes observation must be in such small amounts that it could not be eliminated through a drain. If the infectious fluid has poured out in such quantities that it has worked its way between the loops of intestines, then nothing is to be gained by drainage. Rinsing out the cavity is liable to distribute the infectious material over a still larger surface, he thinks. He operates only in an interval period, and not until nine months after the date of infection, trusting that the bacteria have perished by this time. In three instances there was a communication between the pus pocket and the vagina, illustrating the complete failure of palliative treatment by mere incision in case of suppurative affections in the adnexa.

90. **Implantation of Ureter in Bladder.**—Franz reports 15 cases in which the ureter was implanted in the bladder. His technic was worked out on the cadaver and on animals. He found it necessary to avoid crushing the ureter at any point and to use as little suture material as possible. He has performed the operation in 20 cases, but in five the patients succumbed to the effects of cancerous degeneration, and they are not included in this report. In one of the other cases one ureter was severed in the course of an abdominal operation for removal of uterine cancer, and the ureter was implanted in the bladder; in another case the operation was for removal of a

cancer in the bladder, and in another of a myoma in the uterus. Twice both ureters had to be resected and implanted in cancer operations, and in three instances a fistula between the ureter and vagina was cured by implanting the ureter in the bladder. In another case the ureter was injured during a vaginal hysterectomy and had to be implanted in the bladder. The results, both immediate and remote, of the operations on the ureters were extremely beneficial in most cases and did no harm in any instance. In two other cases it proved impossible to implant the injured ureter in the bladder, and the kidney above had to be removed. The individual technic in each case is described in detail.

### Riforma Medica, Naples.

*Last indexed, page 841.*

91 (No. 50, pp. 1373-1400.) *Pathogenesis of Gastric Ulcer and its Importance for Treatment. (Ulcera gastrica.) G. Marchetti.
92 Physical Signs of Presence of Gas in Pleural Effusions. (Note di semeiotica fisica, etc.) M. Landolfi.
93 *Passage of Mercury Through Placenta. (Passaggio del mercurio dalla madre al feto.) A. Conti and P. F. Zuccola.
94 (No. 51, pp. 1401-1428.) Experimental Study of Chronic Poisoning from Nitric Acid. (Avvelenamento cronico da acido nitrico.) L. Tomellini.
95 *Experimental Rabies in the Rat. (Rabbia nel ratto.) T. Mazzei.

**91. Pathogenesis and Treatment of Gastric Ulcer.**—Marchetti calls attention to the fact that both the sympathetic and vagus are involved in the innervation of the stomach, and states that these two nerves are the ones that generally suffer most in nervous disturbances. He has made a number of experiments on animals which confirm his clinical experiences and suggest that lesions in the vagus—the motor nerve of the stomach—causing local paralysis, entail stagnation of stomach contents at the part involved, with ulceration in time. When the vagi are divided or ligated the motor function of the stomach is completely arrested and death is only a question of a few days. Ligating the right vagus paralyzes only the right half of the stomach, and in his experiments the center of the paralyzed part soon showed the typical ulcer while the rest of the stomach remained normal. The animals all vomited soon after eating, as do persons with an incipient ulcer. He attributes this to excitation of the vomiting center from the mechanical irritation of the food at the seat of the incipient ulceration. He thus explains ulcer of the stomach as the result of some change in the vagus interfering with the normal motor function of the part of the stomach innervated by the branch of the nerve in question. Particles of food collect at this point, which ceases to share in the general peristalsis of the organ, and stagnation is sooner or later followed by ulceration. He also states that treatment of ulcer of the stomach should aim to restore the injured vagus to normal, when the ulcer will heal of itself. If this can not be done, then the only course is to excise the paralyzed portion as the conditions that induced the development of the ulcer persist and the ulcer is liable to be reproduced at any moment. In his experimental research, ligature of one branch of the vagus, causing local paralysis of part of the stomach, was invariably followed in the course of about four weeks by the development of an ulcer, similar in every respect to simple, chronic gastric ulcer in man. Gastroenterostomy always cured the ulcer in his animals, and he advocates it for severe cases in man as the ideal procedure.

**93. Passage of Mercury Through the Placenta.**—Conti has been studying this subject both in the clinic and in experiments on animals, and his conclusions are that mercury administered to the mother does not pass through the placenta to the fetus. He believes, however, and his research seems to demonstrate the fact, that the mercury in the maternal organism causes the production of substances—antibodies—which are able to pass through the placenta to the fetus and to act on the specific agent of the disease, neutralizing its action.

**95. Experimental Rabies in the Rat.**—Mazzei relates experiences with rats inoculated with rabies which have convinced him that rats are much better adapted than dogs, monkeys or other animals for experimental study and control of the action of rabies virus and antibodies.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

ANESTHETICS AND THEIR ADMINISTRATION. A Text-book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.V.O., M.A., M.D., Cantab., Anesthetist to His Majesty the King. Third Edition with Illustrations. Cloth. Pp. 627. Price, $4.00 net. London and New York: The Macmillan Co., 1907.

PEDIATRICS. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of Pediatrics, Harvard University. Fifth Edition, Rearranged and Rewritten. Illustrated. Cloth. Pp. 1060. Price, $6.00 per volume. Philadelphia and London: J. B. Lippincott Co., 1907.

HISTOLOGIC OBSERVATIONS ON SLEEPING SICKNESS AND OTHER TRYPANOSOME INFECTIONS. By F. W. Mott, M.D., F.R.S. (From the Pathologic Laboratory of the London County Asylums). Cloth. Pp. 50. Price, $1.50 net. New York: William Woods & Co., 1907.

AIDS TO DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN. By John McCaw, M.D., R.U.I., L.R.C.P., Edin., Physician to the Belfast Hospital for Sick Children. Third Edition. Cloth. Pp. 381. Price, $1.25. New York: William Wood & Co., 1907.

TEXT-BOOK OF MATERIA MEDICA FOR NURSES, Including Therapeutics and Toxicology. By G. P. Paul, M.D., Attending Physician to Samaritan Hospital, Troy, N. Y. Cloth. Pp. 242. Price, $1.50 net. Philadelphia: W. B. Saunders Co., 1907.

PSYCHOLOGY APPLIED TO MEDICINE. Introductory Studies by David W. Wells, M.D., Lecturer on Mental Physiology in Boston University Medical School. Cloth. Pp. 141. Price, $1.50 net. Philadelphia: F. A. Davis Company, 1907.

DERMATOLOGISCHE VORTRÄGE FÜR PRAKTIKER. Heft 7, Die ambulante Behandlung der Unterschenkelgeschwüre. By Dr. Jessner. Dritte Auflage. Paper. Pp. 52. Price, Mk. .9. Würzburg: A Stuber's Verlag (Curt Kabitzsch), 1907.

MANUAL OF DIAGNOSIS AND TREATMENT OF DISEASES OF THE EYE. By Edward Jackson, A.M., M.D., Professor of Ophthalmology in the University of Colorado. Cloth. Pp. 615. Price, $2.50 net. Philadelphia: W. B. Saunders Co., 1907.

THIS LABYRINTHINE LIFE. A Tale of the Arizona Desert. By George Alexander Fischer, author of Beethoven: A Character Study. Cloth. Pp. 382. Price, $1.20. New York: B. W. Dodge & Co.; Chicago: A. C. McClurg & Co., 1907.

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